ESTABLISHED IN 1872

PAPER TRADE JOURNAL

With Which Is Combined

PAPER

Vol. XCII, No. 10 Thursday, March 5, 1931

Ohio Paper Co. Progresses Under New Control

Miamisburg Property Has Been Operated Since Beginning of Year By President R. P. Munger and Secretary D. H. Sprecher—Recent Improvements Comprise New Steam Engine, Stokers, Hot Air System, Modern Rag Handling System, Continuous Paper Beater, Etc.—Tonnage of Plant Has Been Increased to More Than 40,000 Pounds Per Day

Buy Control of Ohio Paper Co.

MIAMISBURG, Ohio, March 2, 1931.—R. P. Munger, president and D. H. Sprecher, secretary, have bought control of the Ohio Paper Company and have been operating the property since January 1, giving particular attention to all kinds of rag felts, such as roofing, deadening and linoleum and going into new items—red and blue sheathing in indented packing. The business of the company will be serving roofing mills and large paper jobbers.

The Ohio Paper Company, which is over fifty years old, owns its own hydraulic and has a substantial mill property at 620 North Main street, Miamisburg. In June 1925 the property was leased to the American Asphalt Roof Corporation for one year and later granted an extension to October 15. During the period of this lease the company had increased the tonnage at its plant at East St. Louis to such an extent that the property at Miamisburg was no longer needed by it for roofing felt and accordingly gave up the lease.

R. P. Munger was local manager for the American Asphalt Roof Corporation at East St. Louis, having built that mill in 1917 and sold it to the American Asphalt Roof Corporation in 1925. He made the lease at Miamisburg with the Ohio Paper Company for American and managed the Ohio property from East St. Louis. When the American Asphalt Roof Corporation gave up the lease, Mr. Munger with D. H. Sprecher, the Ohio mill superintendent, bought control of the Ohio Paper Company.

The mill is being generally improved with stokers, new steam engine, hot air system, improved rag handling system, continuous paper beater, etc., and tonnage has been increased to better than 40,000 pounds per 24 hours.

Racquette River Paper Co. Busy

[FROM OUR REGULAR CORRESPONDENT]

POTSDAM, N. Y., March 2, 1931.—Despite dullness existing in some branches of the paper industry many of the mills in this section are running on full time schedules with the future outlook encouraging. The Racquette River Paper Company has been maintaining steady operations for some time and is now employing in the neighborhood of 350 workers. So far the plant has not been affected by the water shortage which has interfered with operations in other Northern New York mills and the near capacity operations are attributed to development of new lines which have found a ready market. Many of the employees have families and it is estimated that nearly 1,500 residents are dependent on business conditions.

Announcement has just been made that a large reservoir in the Black River Valley has been exhausted which may prove an added handicap to numerous mills which have been on curtailed schedules. Officials at the plant of Knowlton Brothers claim that the river's flow has been increased despite this fact and the company expects to continue capacity operations indefinitely. Most of the concerns depending on the river for water power have been seriously hampered throughout the winter and heavy spring rainfalls are being awaited. At the plant of the Dexter Sulphite Pulp and Paper Company it was learned that water was still running over its large dam with indications that operations would not be hindered to any great extent.

Schroon River Paper Co. Resumes

[FROM OUR REGULAR CORRESPONDENT]

WARRENSBURG, N. Y., March 2, 1931.—The Schroon River Paper Company is again in operation following a long curtailment although the depth of water in the river has caused curtailed operation in some departments. Large quantities of pulpwood have been shipped to the mill and officials claim that orders are sufficient to guarantee steady operations if the necessary power was obtainable. One of the large grinders was started up this week but the fall of the water in the Schroon River caused a suspension of operations a few days later. The pulp departments are the most seriously affected by conditions.

E. V. Donaldson Heads Robert Gair Co.

E. Victor Donaldson was elected president of the Robert Gair Company at the annual meeting February 26, to succeed George W. Gair, who was re-elected chairman of the board of directors. Mr. Donaldson has been vice-president and general manager and will continue his managerial direction in the new post.

The meeting also elected Edwin R. Marshall first vice-president. Mr. Marshall is executive vice-president of the First National Old Colony Corporation. The other officers and members of the board were re-elected.

Wisconsin Mills Protest Water Level Order

Government Recently Ordered Former Level Restored At Menasha Control Dam—Lower Fox River Valley Paper Mills Make Vigorous Defence of Adequate Storage Level In Lake Winnebago—F. E. Sensenbrenner Entertains Members of Rotary Club

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., March 2, 1931—Water power users of the lower Fox River Valley, mostly paper mills, made a vigorous defense of an adequate storage level in Lake Winnebago at a hearing conducted by Major H. M. Trippe, government engineer, at Menasha, Wis. last week. The government recently ordered the level restored to 21¼ inches at the control dam at Menasha, instead of the 15-inch level in effect for the last seven years. A hearing followed, when reparian owners on the upper river, and officials of Oshkosh and Fond du Lac, Wis. protested the order.

Attorney J. P. Frank, and T. E. Orbison, of the engineering firm of Orbison & Orbison, Appleton, Wis., appeared on behalf of the water power interests. They pointed out in lengthy testimony that the riparian situation had been settled a long time ago, and that the damage caused by high water in the Spring was not as great as claimed. Losses to mills when there is an inadequate water supply were cited, using the extreme drought of the last season as an example. Ben Prugh, manager of the Fox River Navigation Company, a co-operative coal barge line owned by paper mills, also testified as to the difficulties of navigation because of the low water during the summer season.

Riparians presented their objections through an attorney, and cities of the opposing groups were heard on matters of sanitation, pollution, destruction of fish and other angles of the situation. The purpose in raising the lake level, it was explained, was to store up a sufficient water supply so an average flow could be maintained for the power dams during low water periods, as well as for keeping the river properly flushed. Lake Winnebago is nearly forty miles long and the difference of 6¼ inches means considerable as to the amount of water supply. All of the testimony was recorded and will be referred to the war department for a decision as to whether the recent order is to stand.

Safety School Work

Importance of continuous safety effort was emphasized in an address at the safety school of the paper mills of Neenah, Wis., by D. D. Fennell, safety engineer of Chicago, during last week's session. He likened it to a lubricant that should be given men as it is to machines. The removal of fear and hazard not only cuts down the appalling annual loss of life and limb, he said, but also increases the productivity of the men. "There is a real need in the field of safety work for technically trained men," he added. "Safety engineering must tie its activities into a systematized and logical whole if it is to become a distinctive division of the engineering field."

The fifth safety school session was held at Marinette, Wis., last week with Dr. Wm. J. H. Boetcker, of Erie, Pa., as the speaker. At Green Bay, the last school session was to be held March 4 with A. H. Hudson, of Chicago, as the speaker. J. M. Conway, president of the Hoberg Paper and Fibre Company was to preside.

Purchase of Forest Tracts Approved

Federal approval has been given covering the purchase by the government of five forest tracts in Wisconsin and Michigan as timber preserves and reforestation areas. The Wisconsin purchases include: 11,252 acres in the Flambeau unit, $16,075; 3,168 acres in the Moquah unit, $5,379; 6,775 acres in the Oneida unit, $13,585. Michigan tracts are: 1,155 acres in Hiawatha forest, $1,732, and 1,800 acres in the Marquette unit, $2,700. Additional Wisconsin purchases under consideration are large tracts in the Oconto, Mondeaux and Namekogan units.

Statistics prepared by John S. Bordner, in charge of state land economic inventories in Wisconsin, indicate that timber growing under the new forest law would take care of the entire $41,000,000 annual cost of state government from taxes paid on a timber crop from 50,000 acres. The first thinning of white pine and white spruce at the end of 30 years would pay the cost of the land and planting, and compound interest, and still leave a net profit of $5.96 per acre. A second thinning at the end of 60 years produces a net profit or income of $141.91 per acre, and a final cutting at the end of 80 years will return $739.28. These estimates allow for the death or suppression of over one-half of the trees during that time. The estimates are based solely on stumpage value of the forest crop at $4 per cord and $15 per thousand board feet. Cost of planting is given at $6 per acre and land at present prices of $2 an acre.

Interlake's Fine Safety Record

The Interlake Pulp and Paper Company, division of the Consolidated Water Power and Paper Company, at Appleton, Wis., continues its remarkable safety record. With only a few days to go, the mill, with 225 employees, has operated for nearly 365 days without a lost time accident. Workers were showing unusual loyalty in attempting to achieve a perfect year's record. The company's mill at Stevens Point also continues to function without accidents, having about seven months to its credit.

Paper Chemistry Institute Fellowships

Two new research fellowships have been given the Institute of Paper Chemistry at Lawrence College, Appleton, Wis. They amount to $1,500 each, one from the Gilbert Paper Company, Menasha, Wis., and the other from the Staly Starch Corporation, Decatur, Ill. The former has been awarded to Richard Crane, a graduate of Wooster College, and the latter to P. Frederick Gross, a graduate of the University of Southern Colorado.

Vocational Schools Issue Unique Booklet

Something rather unique as a means of instruction in the pulp and paper classes conducted by the vocational schools of Wisconsin is a booklet issued jointly by these schools entitled, "Significance of Pulp and Paper Industry in Growth and Development of Civilization." The history of paper, classifications and definitions, raw materials, steps in manufacture, and the advantages and disadvantages of occupation in the industry are described briefly. The pages are printed on paper obtained from each of the mills in Wisconsin, so the student has samples of all kinds made in the state. The cover of the book is made of Cellusuede, a product resembling leather and produced by the Mosinee Paper Mills. Other varieties used are book, tissue and crepe paper, rag bond, sulphite bond, kraft and glassine. The rear pages of the book contain pictures of the paper mills of the state.

News of the Industry

Members of the Rotary Club at Menasha, Wis., were guests of F. E. Sensenbrenner at an inspection of the International Wire Works, where the process of making Fourdrinier wires was demonstrated. Mr. Sensenbrenner told in address of the history of the firm. He explained that a third addition had just been

completed, making the structure modern in design and equipment. The plant has eleven automatic looms, three winders and one stretching table. Power looms are now used entirely, giving greater production capacity and wire of a finer texture.

Lakes Rosebush and Miscauno, created several years ago when the dams were built near Amberg, Wis., by the Northern Electric Company, the power subsidiary of the Northern Paper Mills, have been stocked by the company with 100,000 year-old perch. During the past eighteen months, the lakes also have been supplied with 16,000 wall-eyed pike and 5,000 small mouth black bass.

Axel Lindberg, who helped to build the Outagamie Paper Mill in 1883, died recently at his home in Kaukauna. He was 76 years old and had been employed for the last eighteen years by the Union Bag Company at its Kaukauna mill.

Death came last week at Redlands, Cal., to Mrs. John Alfred Kimberly, formerly of Neenah, Wis. She was the widow of the late John Alfred Kimberly, one of the founders of the Kimberly-Clark Corporation, Neenah, and its president until five years ago. Mrs. Kimberly was the mother of John A. Kimberly and James C. Kimberly, of Neenah. She was stricken with pleurisy, followed by a heart attack. The body was conveyed to Neenah for burial.

Conditions in Pulp and Paper Industry

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 4, 1931—Julius H. Barnes, chairman of the National Business Survey Conference has just made public a summary of business conditions based on reports from various industries. He has the following to say regarding the paper and pulp industry:

"The daily average production of news print, book and bag papers in December showed an increase over the previous month, although the daily average for all grades of paper decreased 7 per cent. Compared with the year 1929, the total production of paper was 10 per cent less and pulp 7 per cent less in 1930. Inventories in both industries are still moderate although increased approximately 14 per cent during the year. In January, 1931, news print mills operated at 69 per cent of rated capacity, as compared with 85 per cent for January, 1930.

"Book paper production in December was 2 per cent above November, but for the year production was 12 per cent below 1929. Paperboard production in December was 8 per cent below December, 1929, and price quotations were somewhat lower as a result of the decline in raw material prices. During December paper mills operated at 65 per cent and pulp plants at 73 per cent of capacity."

Wheelwright Paper Co. Asks Tax Abatement

[FROM OUR REGULAR CORRESPONDENT]

GILBERTVILLE, Mass., March 3, 1931—The Wheelwright Paper Company of Wheelwright, this town, has petitioned the town for an abatement in taxes owing to the industrial depression. The company asks for an abatement on its taxes for 1929 and 1930 and at a meeting with the town officials William Marshall, assistant treasurer, presented the claim based on the keen competition in the paper industry and the depression. The company was trying in every way to keep this plant in operation he told the officials and the abatement asked for would be helpful to this end. The officials took the matter under advisement.

Sidney Roofing Extension Plans Deferred

MONTREAL, Que., March 2, 1931—The extension plans of the Sidney Roofing and Paper Company, Ltd., of Victoria, B. C., have been temporarily deferred, awaiting improvement in business conditions. The work involves an estimated outlay of a quarter of a million dollars. The present capacity of the mill is 25 tons per day of building and roofing paper, felts, test board and box board.

Boston Paper Market Exhibits Better Tone

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., March 2, 1931—With an increasing number of inquiries for quotations and samples and a little more actual buying, the tone of the Boston paper market is generally better. Although the degree of greater activity which developed in January was not sustained during most of February, the last week many of the wholesalers noted at least a slight improvement and brighter prospects. They do not expect a boom, but a very gradual upturn. Practically all say that business is no worse, although with a few trade has been slow. A tendency towards lower prices in some cases is reported. A representative of a manufacturer of fine writing paper finds the market somewhat spotty, but that it has a good tone. The demand from printers is also rather spotty. Confidence is seen in the fact that new lines are being put on the market. Wrapping paper appears to be holding its own with a fair trade as a whole. Specialties are in moderate demand.

Reports from the box board market vary. In some quarters there is an exceedingly gradual increase in sales, with customers paying prices originally asked. Buyers are requesting immediate delivery, showing that stocks in the hands of consumers are low. The market is generally at least fair, but "not so good yet."

There is a little more business in paper stock with some dealers, but improvement is extremely slow. Price appears to be largely the determining factor in consummating sales. In some grades the market is stronger, with the majority holding their own, although a number of slight declines took place during the week. Prices of old papers and new domestic rags were unquotably changed throughout.

Scandinavian Pulp and Paper Stronger

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 4, 1931—With the exception of a somewhat stronger tone in the sulphite market, reports from the Scandinavian countries do not indicate much improvement in the pulp and paper markets there during the past few weeks according to the Department of Commerce.

Swedish exporters of sulphite pulp and ground wood report these markets extremely quiet, with comparatively small sales for quick delivery. Both Norwegian and Swedish mills report more interest in news print paper during recent weeks, although buyers are still apparently holding back awaiting developments in the Canadian situation. In the kraft market conditions remain practically the same both as regards turnover and prices. Orders for sulphite papers are also coming in slowly, although prices in the market are being maintained, according to reports from Sweden. In the greaseproof market, convention prices are being maintained, although Continental mills are reported as selling cheaper.

Plans New Branch In Halifax

Toronto officials of the Hinde & Dauch Company, of Canada, Ltd., confirmed the report received in this city from Halifax a few days ago of plans to establish a branch plant in Halifax, N. S. The Halifax report stated that the intention of the Royal Print and Litho, Ltd., of Halifax, to establish a second plant in that city at a cost of $250,000 for the purpose of manufacturing cardboard cartons, had been announced. The new plant will employ from 50 to 75 men. The announcement followed publication of plans by the Hinde & Dauch Company to establish a branch plant at Halifax for manufacturing paper containers. The company has two men in Halifax at present completeing arrangements for the new branch, although it is not yet definitely known whether a new building will be erected or one purchased and remodelled. Officials believed that the expansion proposed by Royal Print would in no way interfere or alter their plans. The Hinde & Dauch enterprise will employ upwards of fifty hands, it was stated.

Paper Demand Fairly Satisfactory In Chicago

Manufacturers of Fine Paper Report Renewed Interest and Slightly Increasing Buying Orders —Book and Cover Papers Continue Firm—Coarse Paper Situation Uncertain—Paper Board Market Shows Healthy Improvement In Some Respects

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., February 28, 1931—Except for the condition of the kraft, glassine and bag markets, which one jobber terms "chaotic" the Chicago paper market gave a fairly good account of itself during the past week. The fine paper market more than held its own during the week with manufacturers reporting a renewed interest and buying orders slightly increasing in size as well as in volume. Books and covers are practically unchanged with the market fairly firm and prices steady. The board market, while still having a long way to go, gives every evidence of healthy improvement as production is being carefully watched and balanced with the demand. It is in coarse papers that conditions are more uncertain. Here, in spite of much hard effort, the low prices and constant menace of even lower prices, are making it hard for sales to be made especially in any bulk. Buyers are too confident, say reports, that the market may still break lower. However, there is evidence that bottom has about been reached. Waste papers follow the trend of the paper market.

Paper Salesmen Welcome New Officers

Members of the Middle Western Division of the Salesmen's Association of the Paper Industry returned from the annual program in New York quite fired with the spirit of progress and are immediately entering upon a program of membership expansion. With Creighton Whiting as the new vice-president, the association has already gathered in two new members—C. H. Phipps, of the Watab Pulp and Paper Company, of Sartell, Minn., and E. H. Larkin, of the Bryant Paper Company, Chicago. Jim Coy is the chairman of the membership committee. According to Harold Knott, new president of the national association, the Monday program featuring talks given by members themselves will go ahead for some little time as an important follow-up on the series on differentials which created so much interest.

While the Monday, February 23, meeting of the association, was largely given over to welcoming the new vice-president with flowers, evidence of support, etc., the regular programs will start on Monday, March 2, when Jack Burns, of the Albemarle Paper Company, will have an opportunity to discuss the policies and products of his company, which include krafts and blottings. On March 9, John Wesley, sales manager of the Rhinelander Paper Company, will continue the individual discussions with a talk on the products of his company, glassines and grease proofs. The Chicago members of the newly created Middle Western Division are extending a hearty invitation to all division members out of the city to arrange their Chicago trips so that they may attend the Monday programs.

Board Men Study Unemployment Problem

Among those reporting to Colonel Woods, head of the President's Emergency Committee for Employment on definite steps to solve the unemployment problem is the Paperboard Industries Association which, with a special committee functioning, is making an exhaustive study of this problem. Included in the steps taken to stabilize employment are the accelerating of construction programs, increased merchandising aggressiveness, staggering work, working shorter hours and other commonly known emergency methods. The subject of unemployment will be one of the most important questions up for discussion at the next meeting of the Paperboard Industries Association, according to H. S. Adler, secretary. The committee will report as to its work and a general discussion will probably do a great deal in furthering the efforts of the association.

News of the Trade

Of interest is the activity of the McGregor Paper Company, Chicago, is sending out a questionnaire to labor unions requesting information concerning trade journals. The company specializes in merchandising union made paper. The information to the unions contained an announcement of the manufacture of a new union-made and union-watermarked book paper called Gompers Union Magazine Book.

One of those illustrations that are very much "frameable" features this weeks advertising mailing on Foldwell papers sold by the Chicago Paper Company, Chicago. The illumination, an old street scene, was admirably done on the dull finish stock while the remainder of the advertising piece was given over to the possibilities of Foldwell Semi-Dull Coat for water color inks, four color process and black and white. The complete Foldwell line is one of the Chicago Paper Company features.

From the Eastern Manufacturing Company with western sales office in the Conway Building, Chicago, comes a direct mail piece entitled "Touring the Print Shops With Atlantic Bond." The folder contains ten actual samples of attractive letter heads printed on Atlantic Bond, a color swatch and a neat discussion of the character and quality of Atlantic Bond. The LaSalle Paper Company is the Chicago distributor for this paper.

A very usable reference guide for those who want complete information on gummed cloth tapes is to be found in an attractive booklet "Green Core Gummed Cloth Tapes" sent out recently by the Mid-States Gummed Paper Company, Chicago. A number of samples of gummed tape in colors are tipped on the various pages.

Dr. David Friday, one of the country's leading economists, is to address members and guests of the National Association of Waste Material Dealers, Inc., at its Eighteenth Annual Banquet to be held at the Congress Hotel, Chicago, on Wednesday evening, March 18. Dr. Friday's subject will be: "The Outlook for Prices, Production and Profits."

D. F. Peck, president of the Hanchett Paper Company, will return to Chicago after an extended winter trip through Florida and Cuba on or about March 10. He is expected back in time for the next regular session of the Chicago Paper Association, of which he is president Meanwhile the association is doing everything possible to restore confidence and some semblance of order in the kraft and bag market. Special conferences have been held with an eye toward stabilizing the market here and this work will undoubtedly be continued at the next regular meeting on Tuesday evening, March 10.

The Cromwell Paper Company, Chicago manufacturers of tympan papers for printers, has placed its advertising account with Hurja, Chase & Hooker and is planning a series of advertisements to show the benefits of tympan paper for securing the best reproduction of printing work.

From the West Virginia Pulp and Paper Company we learn that the 1931 advertising campaign will feature inserts entitled "Monuments of Industry." The first was entitled "steel," others to come will feature other industries.

New Fourdrinier for Scott Paper Co.

CHESTER, Pa., March 2, 1931.—The Scott Paper Company of this city has just ordered another 180-inch fourdrinier paper machine from the Moore and White Company of Philadelphia, Pa.

Activities of Ontario Paper Manufacturers

George Carruthers, President of Interlake Tissue Mills, Ltd., Merritton, Ont., Announces Appointment of George E. Rauch As Mill Superintendent—Canada Paperboard Co.'s Plants At Toronto and Montreal Are Still Operating At Close to Capacity

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., March 2, 1931—It was announced this week by George Carruthers, president of the Interlake Tissue Mills, Ltd., mills at Merritton, Ont. that George E. Rausch had been appointed mill superintendent, following the resignation of C. Nelson Gain, formerly of the Don Valley Mills, Toronto, and for some years in charge of operations at Interlake. Mr. Rausch is widely known in the paper trade both in Canada and the United States. He was born at Kaukauna, Wis., in 1891 and began his early paper making experience with the Thilmany Pulp and Paper Company at Kaukauna, in the Fox River Valley. He then spent several years with the Detroit Sulphite and Paper Company, at Detroit. Following this he spent three and a half years with the Interlake Tissue Mills at Merritton. Later he left Interlake to enter the service of the Forest Castle Paper Company in the capacity of superintendent. Up to a year ago he was general superintendent of the Pittston Paper Company, at Pittston, Pa., and had been with that company for ten years. At the same time he had charge of the Caledonia Cellulose Company of Pittston. For the past year Mr. Rausch has been superintendent of the Dunn Sulphite and Paper Company, Port Huron, Mich., which position he left to become superintendent of the Interlake Mills. It is understood that Mr. Gain will enjoy a short rest before reentering the paper making field.

Paperboard Company Improves Position

The Canada Paperboard Company, Ltd., is operating its two principal units in Toronto and Montreal on a profitable basis. Drastic economies put into effect since the company was placed in the hands of a receivership are already apparent in reduced overhead costs. The outlook for the company is considered more promising in view of the growing tendency among the various mills towards co-operation, rather than the continuance of the previous policy of cut-throat competition. Both the Toronto and Montreal plants operated close to capacity in December and January, and February saw a fair increase in business. Indications, however, have not warranted the company in considering the early resumption of manufacturing activity in the Campbellford and Frankford plants.

Ontario Paper Co. to Spend $500,000

Further details of the projected improvements to be carried out at the plant in Thorold, Ont., of the Ontario Paper Company, reveal that the company will spend $500,000 in connection with their remodelling and equipment program. The work will be carried out during the present year and is expected to start as soon as spring opens. Arthur A. Schom, general manager, states that of the $500,000, about half will be expended for increased capacity and reducing production costs; $141,000 for improving quality of news print; $92,000 for maintenance and construction of various buildings, and for safety measures. The company is controlled by the *Chicago Tribune*.

Change in Dennison Management

After twenty-three years service with the Dennison Manufacturing Company, King street West, Toronto, manufacturers of tags and other paper specialties, R. G. Kennedy has resigned the position of manager. Mr. Kennedy came to Toronto from Stratford in 1899 and for a time served with the Dominion Envelope and Carton Company, under Mr. Newall. Joining the Dennison forces in 1908 he rose to be manager. His purpose is to take a well-earned rest before re-entering the business field. In the meantime H. E. Lancaster, assistant manager, has been promoted acting manager in Mr. Kennedy's place.

Notes and Jottings of the Trade

J. J. Herb, president of the Westminster Paper Company, Ltd., New Westminster, B. C., and a former Ontario paper maker, plans to leave shortly on a trip to Australia and New Zealand in the interests of his firm. The paper company has enjoyed a considerable market for certain of its products in these two Dominions.

Arthur G. Pounsford, manager of the Port Arthur Division of Provincial Paper, Ltd., was a recent visitor at the head office of the company in Toronto.

S. J. B. Rolland, chairman of the board of the Rolland Paper Company, Ltd., recently left Montreal, accompanied by Mrs. Rolland, for Miami, Florida, where he will spend a couple of months.

As president of the Pleasant Point Cottagers Association, a group of Torontonians who summer on Lake Sturgeon, Fred W. Halls, head of the Fred W. Halls Paper Company, Ltd., was host to a large number of merry makers at the Parkdale Canoe Club in Toronto a few evenings ago.

The Interlake Tissue Mills, Ltd., declared its quarterly dividend at the directors meeting following the annual meeting of the shareholders a few days ago. The reports presented indicated that the company had quite a good year despite adverse business conditions.

If present weather conditions hold and there is an early opening of Spring, the fire hazard in the district of Thunder Bay will be unusually heavy, it is predicted. From October to the end of January of this year the rainfall has been 30 per cent under normal and during the same period the temperature has been 10 per cent above normal, the records show. Both conditions tend toward a greater degree of dryness in the spring with a consequent raising of the hazards of fire in the pulpwood areas.

New Ross Paper Machine Hood Bulletin

The J. O. Ross Engineering Corporation, of 122 East 42nd street, New York, have just published a new bulletin describing the Ross Machine Hood, which is profusely illustrated with typical paper mill installations. Hoods over the paper machine are extremely essential for the efficient and well ventilated machine room, and this fact being now realized by all paper makers, the demand for hoods has been growing during the last decade.

By the installation of paper machine hoods, the problem of machine room ventilation has been considerably simplified. Naturally, with a hood, the vapor rising from the paper machine is confined within an enclosure, and can be more easily removed than it could be after it has been allowing to spread, not only through the machine room itself, but also adjoining rooms.

New Arc Welding Supplies Catalog

The Lincoln Electric Company, manufacturers of arc welding equipment, with general offices and factory at Cleveland, Ohio, have just published a new bulletin describing their varied line of Arc Welding Supplies. The booklet is written in a very interesting and informative manner and is profusely illustrated.

Pennsylvania Paper Mills Are Marking Time

Distributors Inclined to Hold Up Orders Until Volume of Spring-Time Demand Is More Plainly Indicated—Fine Paper Market Is Apparently Holding Up Very Well—Book Papers Are Moving Into Consumption At Fairly Satisfactory Pace.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., March 2, 1931.—With the paper market indicating the uncertainty of the outlook in the business world there is a tendency on the part of distributors to hold up mill orders pending assurance that Spring time will be as encouraging as anticipated. The fine paper market seems to be holding up very well. Book papers are being bought in fair volume from mill representatives and those merchants catering to contract buyers. With Easter looming, there is demand among large consumers for specialties in announcements and other advertising grades needed for the coming Pascal season. Card stocks and some of the better grades of writing papers are also active. There appears to be a quantity of kraft wrapping and allied lines in the hands of distributors who have been obliged to carry inventories from last year. Few local mills are concerned with kraft sales at the present time, awaiting the clearing of present stocks before making sales drives.

There was announced this month a 10 per cent reduction in the price of sulphite tissues and all wrapping grades are now below the same period of 1930. Bags are steadier but distributors are well stocked. There seems to be no bottom to reductions in twines. Sisals sold at 1½ cents per pound less this month, jutes at 1 cent below last month and cotton twines were equally reduced. Paper boards are draggy with chip at $30 and news at $32.50.

Wholesale Waste Merchants To Celebrate

With an innovation in its program and the introduction of Ladies Night the Philadelphia Wholesale Waste Merchants Association will celebrate on Wednesday evening on the occasion of its annual banquet. The gathering will be held at the Benjamin Franklin Hotel in the Betsy Ross Room. The committee in charge of the entertainment is composed of William L. Simmons, John Simmons Sons, and William J. McGarity, Sr., Penn Paper and Stock Company. There will be dancing and a vaudeville entertainment to follow the banquet.

Wrapping Paper Expenses Reported

With the return from Bermuda of President Norbert A. Considine, of the Paper House of Pennsylvania, the monthly reports of the work now being carried on by a special committee of members of the Wrapping Paper Division of the Philadelphia Paper Trade Association were resumed at the Down Town Club last Wednesday, when the discussion on "Proper Percentage of Expense of Operation" was featured. At the meeting it was disclosed that the sales of wrapping paper for the second four week period of the current year showed an increase of 10 per cent over the first four week period, as summarized in the average business statistics of several of the leading paper houses which have been used as a basis for stabilizing the local markets. The distributors reporting showed that there was a steadier price trend as values held about the same as in the previous four week period. The report on the activities of the National Convention will be given by T. H. B. Smythe at the next meeting of the wrapping paper dealers.

W. Harry Goebel Passes

W. Harry Goebel, manager of the sanitary paper and papeterie departments of the Garrett Buchanan Company, passed away at the West Philadelphia Homeopathic Hospital last Saturday following three weeks illness from pneumonia. The officials and associates of the Garrett-Buchanan Company attended the funeral services and burial in Camden, N. J. He had been connected with the Garrett Buchanan Company for more than 25 years. He is survived by his widow.

J. R. Howarth Paper Co. Leads Bowling League

In the last game played at the Alleys, 9th and Market streets, Thursday evening, the J. R. Howarth Paper Company, Inc., forged ahead in the Paper Trade Bowling League, having captured the lead from the first team of the Whiting Patterson Company. The D. L. Ward Company stood second, while the Whiting Patterson Company took the 3rd place in the paper trade line up.

American Mills Paper Co. Adds to Staff

Two additional sales representatives have been added to the staff of the American Mills Paper Company, 2320 Wallace street, converters of paper specialties such as menus, printed doilies, food containers and napkins and allied products used by leading hotels, clubs and institutions of the nation. They are T. W. Freundel and Joseph G. Ganley, who will cover Philadelphia and nearby points.

Hampden Glazed Paper & Card Co.'s New Lines

Complete new sample books of the multi-colored line of fancy box tops made by the Hampden Glazed Paper and Card Company are being sent to the trade here by the local sales representative J. A. Stuckey, with offices in the Bourse Building. The new booklet contains a large selection for 1931.

National Paper Box Convention

The 1931 Convention of the National Paper Box Manufacturers Associations and the Supplies Association Division, will be held in Washington, D. C., May 27, 28 and 29. The annual convention will be held at the Wardman Park Hotel, according to an announcement sent out by the local headquarters of the National Paper Box Manufacturers Association, with offices in the Liberty Title and Trust Company Building, under management of Commissioner Howard P. Beckett.

Morgan H. Thomas Leaves for South

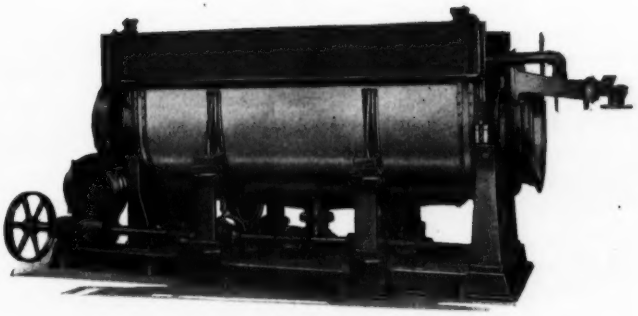
President Morgan H. Thomas, of the Garrett-Buchanan Company, left last week for a late winter vacation in the Florida Resorts. He will remain in the south four weeks.

Bureau of Standards Tests Casein

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 4, 1931—Paper coating tests of domestic caseins are being made by the Paper Laboratory of the Bureau of Standards at the request of the Bureau of Dairy Industry, Department of Agriculture, which is making an extensive study of the quality of domestic caseins and desires information on their paper coating values to supplement laboratory data.

Fourteen samples of different caseins were submitted to the Bureau of Standards. The coating procedure for the tests is that commonly used in the Bureau of Standards mill. Each casein will be submitted to the same procedure to determine differences, if any, in the paper making value of the caseins. The coated papers will be subjected to the regular physical tests, including printing tests. The printed papers will be inspected as to relative quality of printing.



Quality of stock... production... cost per ton ...no matter how you figure it, the screens for your mill are

BIRD SCREENS

BIRD MACHINE COMPANY
SOUTH WALPOLE, MASSACHUSETTS

An Old Timer's Reminiscences

By Joseph H. Wallace, Pres., Joseph H. Wallace & Co.

(Continued from last week)

Paris, on a first visit by Americans, is generally looked over by getting a guide from the hotel and going to see the naughty shows that are kept running only to fleece the Americans on their first trip. We had better luck. Our acquaintance with Michael Abadie opened France to us as to a compatriot, or a close friend. We saw Paris—and France. We went everywhere—through all the mills—cathedrals—art galleries—and what have they? The routine was as follows:

Petit dejeuner or Cafe complet—in bed. This was coffee—rolls—omelet, etc., before one arose. Very luxurious for a mill engineer.

A train to some nearby mill—the examination of the mill—a dinner there, or so called Dejeuner (breakfast), but such a lunch, say we?

Then, back to Paris late in the afternoon after visiting all the the interesting points that could be included.

Then, dress for dinner at some never-to-be forgotten place such as Marguery; Robinson-in-the-trees; Frederick De Laire, and many Brasseries, where eighty variety of Hors d'Oeuvres cost one about 12 cents United States coin.

Then, to a concert—theatre—dance—or?

Then, a supper—and all the while charming people coming into one's life—Ou! La! La; The word "Paris" makes me feel excited.

If any of you are expecting to go to Europe shortly—take me along as a guide—it would really pay—me.

Engineering Work in Europe

Beside building mills, there was engineering work in Europe in many small improvements. We could readily suggest labor-saving arrangements, but one had to find work for the labor so saved, as one could not reduce the labor force—"What would they do for a living? Sounds unusual? The mill at Greenhithe Kent was one of the best jobs we ever had, as we not only designed it throughout—selected and purchased the equipment, but also stayed with it for over a year after it was in operation. It brought us into contact with William B. Bryan, the chief engineer of the London Water Board and his son Bernard W. Bryan, both engineers of high standing on questions of water supply. The water supply in and about London is a special study. It appears that those in the know just tell you where to drill a well and how much you can draw from it, and you go ahead and find afterward that they are right. London and its vicinity appears to be largely on chalk beds and these beds act as sponges and retain the water indefinitely. It is paper making quality, but must be treated for boilers.

While the English job was going on, our work at home included work on the developments at International Falls, Minnesota and Fort Francis, Ontario, for Ed Backus' big mills; a foundry and pump shop for Goulds Manufacturing Company, Seneca Falls, New York; a ground wood pulp mill and power plant for the Fletchers at Alpena, Michigan, and the rebuilding of Knowlton Brothers plant at Watertown, New York.

Vertical Tower Bleaching System

In July 1904, visiting North Wales Paper Company at Flint, Wales, we were introduced to the Vertical Tower Bleaching System and saw pulp bleached at 6 to 7 per cent, which was new to us at that time. We used the same system in the Wall Paper Plant at Greenhithe, England, and it was at that time the most efficient bleaching we had seen. It proved what we all ought to believe, that stock too thick to move horizontally may be made to move vertically. We sat in with Everard when he acquired an interest in Detroit Sulphite Pulp and Paper Plant and made some reports on its value.

At one point South, we were called into advise with respect to a financial program that included several small paper machines and a city water supply. We suggested removing a machine of about 36 inch width, running on carpet linings, and were told that "that machine once made Confederate money." Whereupon a waggish friend suggested that it hadn't ceased. To cap the climax the company placed a slab in the abutment of the dam at the waterworks, stating that this was the work of yours truly, who was duly impressed, but unable to recommend further loans even for monuments to ourselves. It was during this period also that Lewis Houpt, the old reprobate, and I were undertaking to acquire interest in and put into operation some southern ventures and I recall our trips to various spots with pleasure, especially our visit to Hartsville, South Carolina, and the hospitality of Major J. L. Coker and his charming family. If Lew Houpt wasn't such a decent fellow, and if he had a lot of money, I'd be tempted to blackmail him, by threatening to tell some stories about Southern experiences, but I like him too well. "I like him because he suits me!" That's quoted from one of Lew's epics. We surely would like to go back to Hartsville again and eat some more of that fried chicken, hominy and beaten biscuits. We salute the Cokers—don't we Lew?

Invades Norway and Sweden

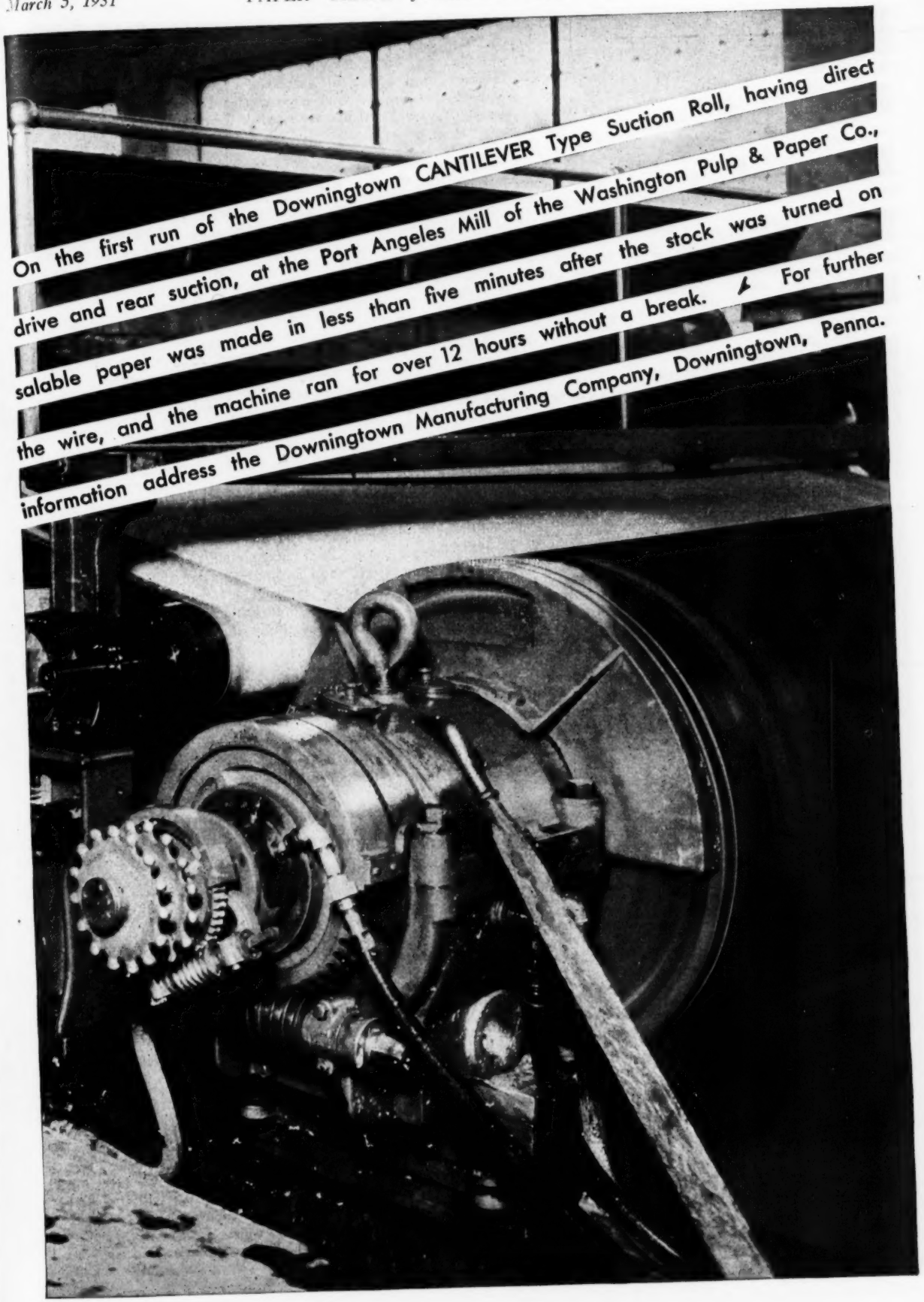
In July 1906, we invaded Norway and Sweden—in company with Hitchen. Crossing the North Sea from Hull to Christiania (now called Oslo), we encountered gales that rocked the little steamer so that nobody could eat—and Hitchen and I lay in opposite bunks and guyed each other incessantly. Our trip through Norway included visits to Moss—where we saw our first sulphate mill in operation: Sarpsborg—the Kellner Partington Mills; Skotfos—the big Union Mills; Drammen, where Swenson and Ryberg were operating the first glassine and greaseproof products we had ever seen; then Katfos—Mjondalen, Gjethus, Lillestrom, then north over the mountains to Trondjhem, the most glorious trip one can have in the summertime. This is a narrow gauge railroad and the scenery coupled with the size of berths kept me on the rear platform of the train all through the night—and it was a pleasure never to be forgotten. Trondjhem is the location of an old Cathedral and the seat of coronation of Norsk kings—it is a wonderful city in the latitude of Iceland, Greenland, Hudson's Bay and Alaska.

Land of the Midnight Sun

From Trondhjem we railroaded across to Sundsvall, Sweden, taking in Hjerpen and Hismosfors on the way; then going to Hernosand—Fräno on the Gulf of Bothnia—then to Palun—the Stora Kopparberg plant—Domnavit, Gefle, Skutska and to Stockholm—to play awhile. Altogether, we have made seven visits to the mills of Sweden and Norway, and it is our feeling that American paper makers visiting Europe will find their pleasantest and most educational opportunities in these North lands. They are splendid hosts and they know pulp and paper. At Stockholm we have seen very attractive living conditions at most reasonable costs. If we ever have the opportunity, we mean to spend our summers in the land of the Midnight Sun.

Start Wrapping Paper Mills in South

During the Fall of 1906, while buying lumber for the mills we were building, in Europe, we came to the lumber mills at Savannah, Georgia, and noted the waste burners all over the harbor. And there is where we fell. That observation and what followed have moved the wrapping paper business to the South. Barrels of this refuse went to New York. Miniature



On the first run of the Downingtown CANTILEVER Type Suction Roll, having direct drive and rear suction, at the Port Angeles Mill of the Washington Pulp & Paper Co., salable paper was made in less than five minutes after the stock was turned on the wire, and the machine ran for over 12 hours without a break. For further information address the Downingtown Manufacturing Company, Downingtown, Penna.

plants for testing it out for sulphate treatment were built—discarded—built again—again discarded and again built. Barrels of the material went to Sweden where Carl P. Carlson was the wizard of the sulphate mill. And in 1907, at Copenhagen, in Denmark, we met Carlson to discuss Southern pine possibilities. That meeting was memorable and amusing. George Marshall and I with Carlson and one of his staff had a dinner party together at Hotel d'Angleterre, Copenhagen, on May 9, 1907. I remember it well, for we thought that Carlson, being Swedish would want much—booze—so we kept it coming—and we learned afterward that Carlson was drinking because he thought *We* wanted it plentiful.

First Southern Sulphate Mill

Our excess of politeness resulted in our becoming quite critical of the very fine orchestra and upon being invited to direct them, the writer accepted the invitation with not the slightest hesitance. We believe that Grieg's Peer Gynt Suite was never more vociferously rendered or applauded than it was on that momentous occasion—when Carlson became out associate in designing the first Southern sulphate mill in the United States—namely the mill of the Roanoke Rapids Paper Manufacturing Company at Roanoke Rapids, North Carolina. We bought digesters, diffusers and other welded from Julius Pintsch, A. B., Berlin, Germany, where we noticed that some undersea boats were also being made—this at the Pintsch shops at Tuestenwalde, near Berlin. This plant at Roanoke Rapids, North Carolina, afterward was the Halifax Paper Company and was owned in Richmond. While in Berlin the same trip we heard the opera, Merry Widow sung in German. Several American managers had been negotiating for the American rights. When I asked for tickets, all the German I could think of meant "two good seats." We were given the stage box and the play apparently was directed to it and us. Afterward we learned that we were mistaken for theatrical managers—such is fame! Great (?) industrial engineers mistaken for theatrical managers!

Shut Down and Double Output

Roanoke Rapids, North Carolina, was some place at that time. We were engineers for a paper mill, ground wood pulp and sulphate fibre mill for Roanoke Rapids Paper Manufacturing Company—a power station and concrete dam for Roanoke Rapids Paper Company, and a board mill for Roanoke Rapids Fiber Board Company, all at one period. And a superintendent at Roanoke Rapids once told me he could make as much ground wood pulp with three grinders as he could with four. I couldn't shake him in his belief. I recommended shutting them all down and doubling the output. And he soberly replied "*That* wouldn't work." While at Roanoke Rapids the food supply was not exactly up to Scandinavian standards to which we were accustomed, and occasioned some slighting remarks—especially were the flies obnoxious in the dining room, which was unscreened. This led to a sign on the wall, as follows:

"This is to certify
That I never saw a dirty fly
In the diggins
Of Mrs. Higgins."

It is needless to say that if Mrs. Higgins had found out who did it, he would have starved to death.

Losing Valuable Youngsters

One of my engineers, Theodore Chase, remained at Roanoke Rapids and became manager of the Power Company. It appears that we have been continually losing valuable youngsters and distributing them in the trade. There is Eddie Wardle, Chief Engineer at Laurentide, Quebec—Charlie Henderson, Kimberly and Clark's chief engineer—Jim Sickman, Manager at Ontonagon, Michigan—Joe Perry and Walter Robertson, checking up paper makers on income taxes at Washington—Willard Bowker with the Manufacturers Mutual Insurance Company in New England—Frank Greenwood, chemist at Munising, Michigan—Arthur Baker, managing director, Empire Mills at Greenhithe Kent, England. Dick Laftmann, Vice President and General Manager at Bogalusa, Louisiana—Adolph Waern, Technical Advisor at Canton, North Carolina and Walter Truesdell, Fred Smith, Tommy Tomlines and Billy Spiker, all successful engineers in general practice, all of whom were considered good kids by yours truly and passed on to bigger things as expected. Our best wishes to all from the old man.

(To be continued)

McLaurin-Jones Gummed Sample Book

The McLaurin-Jones Company, Brookfield, Mass., has just issued a new sample book covering its complete line of guaranteed flat gummed papers. This new sample is not only complete, but is systematically and conveniently arranged, and as a whole is probably the most useful and business-like issue of its kind that has ever appeared for this trade.

The boox is 6½ x 4, a very convenient size, and contains over 60 samples of guaranteed bat and non-kaking gummed papers ranging from the ordinary and inexpensive dextrine and fish glue gummed sheets up to the most scientific gumming and specialty work, in fact there is a grade of paper and a grade of gumming for every possible requirement. Several of these numbers are patented and unique specialties as for instance the strip gumming, the stick to metal sheet etc., a feature which has never before appeared in any gummed paper sample book. In fact some of them have never been offered to the public before and there is a great demand for these specialties.

Each section which contains the sheets of a particular grade is carefully indexed, and the whole book is arranged in stepped indexed form. Each sheet contains complete information as to quality, stock sizes, and advice as to the work for which the particular sheet is specially adapted. Fly leaves before each section give valuable information regarding the sheets following. The book is beautifully illustrated both in black and white and colors.

It also contains at the very start two very concise and instructive sections entitled "How to select the right gummed paper for he job" and "Recommendations for use of McLaurin-Jones Gummed papers on various surfaces."

Riverside Paper Co. Builds at Tacoma

Construction of a new Tacoma industry, a roofing paper mill of large capacity, has been begun on the tideflats just south of the eastern approach of the new Pacific highway bridge over the Puyallup river, says the *Ledger* of Tacoma, Wash., in a recent issue. The company building the mill has been very secretive in its operations thus far, even the principals remaining in the background, but its title, the Riverside Paper company, has been made known.

An application for an easement across a corner of the city's dog pound property adjoining the paper mill property on the south, filed with the city council Monday, was accompanied by a blueprint showing that the main factory building will be 30 by 280 feet in dimensions and the warehouse 30 by 100 feet.

The application was made to allow a spur track to be built from the Milwaukee line into the mill site. It will be necessary to cross the corner of the city properly on a curve to do this, it was stated. Anna P. MacLean and A. E. Sannes signed the application for the easement.

New Filtration Accessories Bulletin

Oliver United Filters, Inc., has just published a new bulletin describing the various filtering accessories available through its organization. Frequently operators of processes involving filtration, experience trouble with accessory parts because such parts were not made specially for filtration purposes or for the particular filter installed. This bulletin, which is profusely illustrated, tells about the Oliver United Filter accessories and suggests their applications.

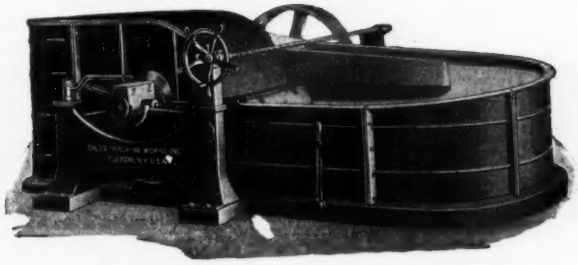
MAKE BETTER BOARD

Why run part time? Many Board Mills with ample Breaker Beaters are running part time because their board is not good enough quality. Their samples do not bring in orders. They cannot equal other samples which are submitted. What is the trouble?

Ten chances to one, it is lack of beating capacity. One or two more Beaters would greatly improve the quality of their board. They could obtain business which they cannot now secure and they could run full time.

If your mill runs only part time, look to your beating capacity. "Your Paper is made in your Beaters." Install Dilts New Type Beaters, make more and better paper, get the business and run full time.

—Dilts—
MACHINE WORKS Inc. FULTON, N.Y.
"Your Paper Is Made In Your Beaters"



MAIL THE COUPON

DILTS MACHINE WORKS, INC.
FULTON, NEW YORK

Gentlemen: Without obligating ourselves, we would like to discuss with your representatives, certain details pertaining to our Beater Room.

Company Name.....

Address.....

By.....

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Huntington, W. Va.—The Midwest Box Company, 111 West Washington street, Chicago, Ill., manufacturer of corrugated paper, fiber and other boxes and containers, will occupy a building now being erected at the glass-manufacturing plant of the Owens-Illinois Glass Company at Huntington. The new unit will be one-story and will be equipped for the production of corrugated paper containers for the shipping of glassware. It is proposed to provide machinery for an initial capacity of about 50,000 such boxes daily, reported to cost over $80,000, with equipment. The structure will be located on West Fifth street and will be used by the Midwest company under lease.

Monroe, Mich.—Fire recently damaged a portion of the Nos. 3 and 4 plants of the River Raisin Paper Company, with loss reported at about $20,000. It is understood that operations will not be affected by the fire. The loss will be replaced at an early date.

New York, N. Y.—Strongtex Papers, Inc., recently organized by Harold H. Cutler, 272 West 72nd street, New York, and associates with a capital of 2000 shares of stock, no par value, is said to be arranging for the early operation of a local plant for the manufacture of heavy paper stocks for wrapping and other service.

Cleveland, Ohio.—The Industrial Rayon Corporation, West 98th street and Walford avenue, Cleveland, is said to have plans maturing for the construction of a new local plant for the manufacture of a transparent viscose wrapping stock, resembling cellophane. The new unit will be one-story and is reported to cost over $100,000, with machinery. It is understood that it will be ready for service before the close of the year. Hiram S. Rivitz is president of the rayon company.

Hagerstown, Md.—The Antietam Paper Company has arranged for a change in company name to the Antietam Paper Company, Inc., and will operate with an authorized capital of 700 shares of stock, no par value. John E. Stonebraker is president.

Philadelphia, Pa.—The Penn Card and Paper Company, 20 North Sixth street, has acquired the five-story building at 408-16 Race street, with one and two-story structures in the rear, heretofore held by the Whitall-Tatum Company, manufacturer of druggists' glassware products. It is understood that the property was secured for a consideration of close to $100,000. The purchasing company is said to be planning for remodeling, and will occupy the structure in the near future, when an expansion program will be carried out.

Kalamazoo, Mich.—The Kalamazoo Vegetable Parchment Company is maintaining operations on a capacity schedule, giving employment to a full working force of about 1000 men and women, and will hold to that basis for an indefinite period.

Menasha, Wis.—The School Stationers Corporation, Washington street, manufacturer of paper stocks, etc., for school service, has work under way on a new plant unit to cost close to $40,000, with equipment. General contract was recently let to the New London Construction Company, New London, Wis., and a number of miscellaneous awards have been placed, including elevators with the Otis Elevator Company, Milwaukee, Wis. It is expected to have the unit ready for service early in the spring. Levee & Gmeiner, 601 West College street, Appleton, Wis., are architects.

Kingsport, Tenn.—The Tennessee Eastman Corporation, an interest of the Eastman Kodak Company, Kodak Park Rochester, N. Y., has awarded a general contract to the Ridge Construction Corporation, 335 Lewiston avenue, Rochester, for the erection of proposed new addition to its cellulose plant at Kingsport, consisting of a one and four-story structure, 100 x 580 feet, brick, steel and concrete type, reported to cost close to $1,000,000, with machinery. A list of equipment to be installed will be arranged at once. It is expected to have the new mill ready for service in October.

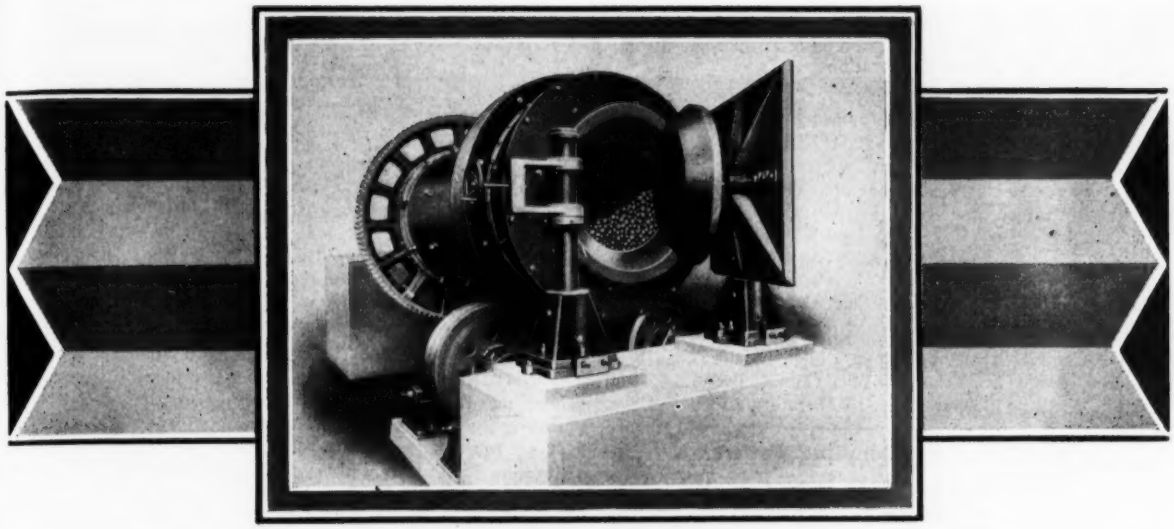
Anniston, Ala.—The Anniston Box Company, Anniston, manufacturer of cardboard and other containers for hosiery and other service, is running on a capacity schedule, and has recently doubled the working quota at the plant. It is expected to hold to the present basis for an indefinite period.

New York, N. Y.—The Utility Paper Box Company, Inc., recently organized by Jacob Back, 1669 50th street, Brooklyn, N. Y., and associates, with capital of $20,000, is said to be arranging the early operation of a new local plant for the manufacture of paper boxes and containers.

Bucksport, Me.—The Maine Seaboard Paper Company is advancing production at its local news print mill, recently placed in service, and has been making additions to the working force. The company is now using electric power on the basis of about 2,000,000 kilowatt-hours weekly, and it is said that this consumption will be increased in the near future. Electric service is being furnished by the Central Maine Power Company, Augusta, Me., an affiliated organization.

Kalamazoo, Mich.—The Kalamazoo Stationery Company is working at about 80 per cent of full capacity at its local plant, and it is likely that this basis will be continued for some weeks to come. Another local company, the Kalamazoo Paper Company is running on a full time schedule at its mill, with regular output slightly curtailed. No immediate change is anticipated at the plant. F. M. Hodge is president of the last noted company.

Trenton, N. J.—The Panelyte Corporation, Enterprise avenue, Trenton, manufacturer of insulating board products, has begun the erection of a new addition to its mill for increased capacity, consisting of a one-story structure, 50 x 160 feet, reported to cost close to $40,000, with equipment. It is expected to have the unit ready for service at an early date. General contract was recently let to J. H. Kelleher, 5362 Arlington street, Phila-



Use Marcy Rod Mills for Beating Paper Pulp

MARCY ROD MILLS are showing a saving in power consumption running from 30% to 60% over former methods of beating paper pulp. This saving in power alone is greatly reducing production costs per ton and this saving will quickly pay for the installation of a Marcy Rod Mill.

A better paper stock is being produced by Marcy Rod Mills because of the true beating action of the rods insuring longer fibers and no cutting. Knots and chaffy material as well as ground wood screenings and rag waste are being worked up into valuable paper stock. Shives, shiners and fiber bundles are being eliminated with cleaner stock as the result. Better benders are also produced because of the longer fibers resulting from this method of beating. Absolute control is afforded the paper maker by the Marcy Rod Mill. Through the large open door he can always observe exactly what is taking place within the mill. The formation of a pool at the bottom of the rod pile is prevented and uniform results can always be obtained by this constant control. The interior is readily accessible for the replacement of worn rods and lining. The low pulp line is assured by the open end discharge which prevents the by-passing of stock and insures all of the pulp receiving its full portion of rod beating.

There are rod mills and rod mills but we believe that the Marcy Rod Mill represents in every case the greatest value for the expenditure involved. They are so priced that their performance will more than justify the investment. You might find it profitable to study their application to your beating problem. *Our engineers will gladly assist.*

The MINE and SMELTER SUPPLY COMPANY

PAPER MILL DIVISION

DENVER, COLORADO
1422-17th Street

NEW YORK CITY
225 Broadway

Manufactured for us in Canada by
WILLIAM HAMILTON, LIMITED
PETERBOROUGH, ONTARIO

MASSCO

delphia, Pa. The company is an interest of the St. Regis Paper Company, Norfolk, N. Y.

New Corporations

Pawtucket, R. I.—The Industrial Paper and Cordage Company has been incorporated with a capital of 250 shares of stock, no par value, to deal in paper products of various kinds. The incorporators are Charles K. Shaw, Henry C. McDuff, and James C. Campbell, 241 Wilson avenue, Rumford, R. I. Last noted is representative.

Detroit, Mich.—The J. C. Thomas Paper Company, 2457 Woodward avenue, has been organized with a capital of $10,000, to deal in paper products of different kinds. The incorporators are James C. Thomas and Leo J. Carr.

Wilmington, Del.—The Superior Felt and Paper Mills, Inc., care of the Colonial Charter Company, Ford building, has been chartered under Delaware laws with a capital of $400,000 and 5000 shares of stock, no par value, to operate a paper mill.

New Method of Sampling Papers

Gone, or at least well on the way to being replaced, is the old method of merchandising papers to printers and advertisers with a paper sample cabinet. The Union Paper and Twine Company of Cleveland has just issued a loose-leaf visible paper sample book-sheet size 9 x 15 inches—containing 957 different paper samples in a single Heinn Loose-Leaf Binder.

Being loose-leaf, new samples can be added with ease at will—or old samples can be removed. A unique metal slide, built into the binder, permits unlocking or locking of sheets with a pull or push on a trigger. As the Union Paper and Twine line increases, the binder capacity increases also. A telescopic back and expansion screws permit 50% more capacity. As issued, the 957 samples occupy 9¼ inches in height.

Unlike the cabinet method, with a loose-leaf visible sample book there is no chance that samples can be misfiled or loaned out to be forgotten. Every sample is where it *should be,* and lays flat, in plain view, because of a patented method of slotting and crimping each sheet. Samples in this book "look out at you"—don't hide themselves away as in a cabinet drawer. Between the two covers is everything in paper and you pass from one classification to another with a flip of a finger.

Working Hours in Norwegian Paper Mills

Commercial Attache Lund at Oslo reports that Norwegian legislation concerning mill inspection and rules for working hours is considerably more far reaching than in any other European country.

The maximum working hours in Norwegian news print mills are 48 per week, with a limit of 8 hours per day. In other European countries the maximum may be exceeded, provided workers and mills are in agreement. According to such figures as are available, says the Attache, the Norwegian paper industry pays the highest wages in Europe. Consequently the Norwegian news print industry, and in fact all Norwegian paper mills, are considerably handicapped in competition with other European plants, and very strong effort is expected to be made in March to force new wage agreements at lower rates.

George Pomeroy Goes to Harrisville

[FROM OUR REGULAR CORRESPONDENT]

HARRISVILLE, N. Y., March 2, 1931.—Announcement is made that George Pomeroy will assume the position as assistant superintendent of the Harrisville Paper Company early in March. For some time he has served in a similar capacity elsewhere and consequently is well qualified to take over his new duties. It is said that he is an expert in the manufacture of bleached sulphite bond and cover papers such as are produced at the local mill. He will serve in an advisory capacity to Thomas Legge, general superintendent.

Trade Mark Department

CONDUCTED BY NATIONAL TRADE-MARK CO., WASHINGTON, D. C.

The following are trade mark applications pertinent to the paper field pending in the United States Patent Office, which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, 900 F street, N. W., Washington, D. C., trademark specialists. As an additional service feature to its readers, PAPER TRADE JOURNAL gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering.

TWIN-RITE, and silhouette of woman writing with a quill pen.—Ser. No. 283,040. William Harriman, Oklahoma City, Okla., assignor to Twin-Rite Stationery Co., Oklahoma City, Okla. For combination note paper and envelopes.

MY WHOOPEE BOOK.—Ser. No. 299,208. Master Photo Finishers of America, Rockford, Ill. For photo and autograph album.

ENVELLUM.—Ser. No. 303,860. Port Huron Sulphite and Paper Company, Port Huron, Mich. For correspondence envelopes, printing paper, cover paper, and envelope paper.

COLONEL, and portrait of old gentleman.—Ser. No. 304,344. Riverside Paper Corporation., Appleton, Wis. For bond, mimeograph, and ledger paper.

PINE GROVE.—Ser. No.304,660. Hoberg Paper and Fibre Company, Green Bay, Wis. For toilet paper, paper towels and napkins.

FAIRY.—Ser. No. 307,652. Badger Paper Mills, Inc., Peshtigo, Wis. For writing and printing paper.

TRANSCELLO.—Ser. No. 307,907. Transcello Paper Company, Milwaukee, Wis. For transparent paper for wrappers, coverings, containers, window-openings and in bulk.

N. K. P.—Ser. No. 308,039. Walter E. Schwalm, New Kensington, Pa. For printing paper.

INDOPHANE. Ser. No. 292,820. Nekoosa-Edwards Paper Company, Port Edwards, Wis. For moisutre proof paper and semigreaseproof paper used as wrapping paper.

INDOPHANE, a representation of a Hindu, desert scene, etc. Ser. No. 292,821. Nekoosa-Edwards Paper Company, Port Edwards, Wis. For moistureproof paper and semigreaseproof paper used as a wrapping paper.

PICK-BARTH. Ser. No. 300,972. Albert Pick-Barth Co., Inc., New York City and Chicago, Ill. For doilies, tray covers, tablecloths, etc. all of paper; blotter pads, etc.

WAX-LIN. Ser. No. 304,669. Regal Paper Company., Pulaski, N. Y. For waxed paper.

SAVE-LIN. Ser. No. 305,205. Regal Paper Company, Inc., Pulaski, N. Y. For white crepe napkins.

PROTECTO. Ser. No. 308,613. Capital Paper Company, Indianapolis, Ind. For corrugated-paper strips for application to doors of freight cars and the like.

HOLE PROOF. Ser. No. 301,573. Capital Paper Company, Indianapolis, Ind. For paper bags.

BROOK LAWN. Ser. No. 307,753. J. J. Newberry Co., Wilmington, Del., and New York City. For writing paper, note paper, etc.

JUMBO. Ser. No. 305,268. Egg Saver Package Company, Bordentown, N. J. For corrugated paperboard.

TAKANAP. Ser. No. 308.182. Badger Tissue Mills, Kaukauna, Wis. For paper napkins

PERLITE Ser. No. 308,538. Z. & W. M. Crane, Inc., Dalton, Mass. For writing paper and envelopes.

THE "BUDGETFOLD," Ser. No. 308,575. John B. Clerget, Hasbrouck Heights, N. J. For packets of envelopes permanently fastened together with a booklet cover.

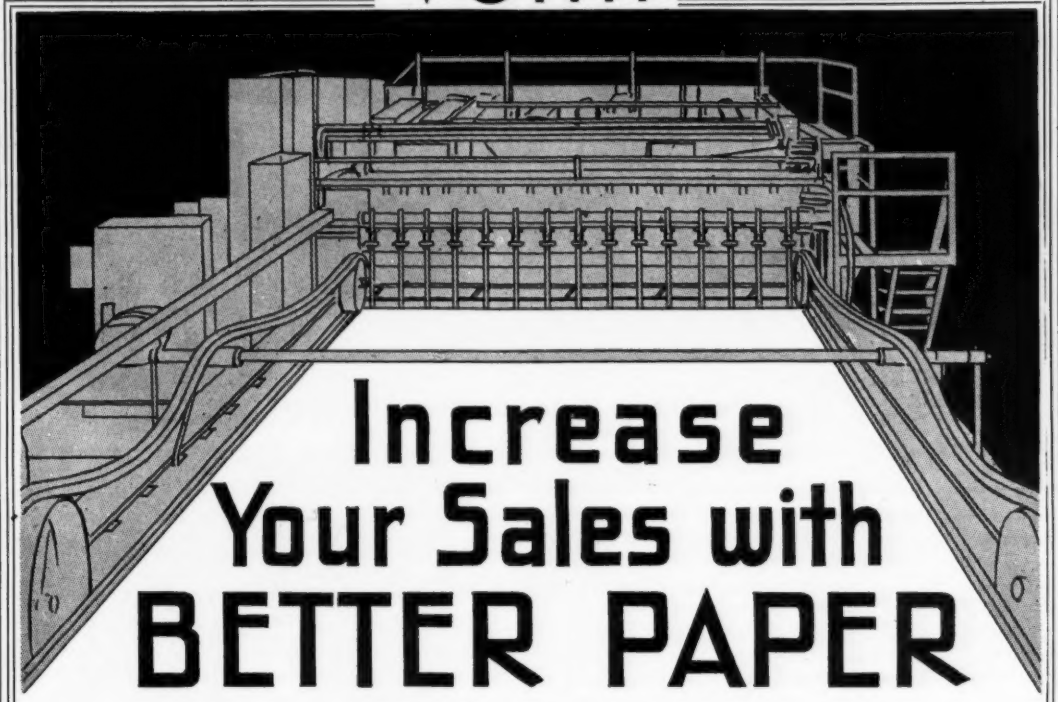
FEATURE. Ser. No. 308,596. Rockwell-Barnes Company, Chicago, Ill. For writing paper.

SILVERMIST. Ser. No. 309.027. Fox River Paper Company, Appleton, Wis. For bond paper.

AIR-WAY. Ser. No. 293,127. Air-Way Electric Appliance Corporation, Toledo, Ohio. For paper permeable to air and like gaseous media and adapted to filter dust and the like therefrom.

SUNNY GIRL. Ser. No. 306,427. Wax Paper Products., Omaha, Neb. For wrappers for bread, cake, and other food stuffs.

VOITH



Increase Your Sales with BETTER PAPER

— at Lower Cost

HOW can the quality of your paper be improved?

One of the first places to check up is your slice equipment. Because here is where your paper is formed — where its uniformity is determined — where its caliper is controlled.

Better quality paper is made with the Voith Inlet. 296 installations throughout the industry are proving it every day in the year. Not only better quality — but lower costs as well.

Complete satisfaction is proved by the number of repeat Voith Inlet installations. The first Voith Inlet installation is always followed by another until the company's mills are entirely Voith Inlet equipped. Can be used on Fourdrinier, Yankee and Harper machines.
Write today to the Valley Iron Works Company, Appleton, Wisconsin.

VALLEY

Equipment for Paper and Pulp Mills

New York Office: 350 Madison Ave.
Canadian Representatives: Pulp & Paper Mill Accessories, Ltd., Montreal, Canada

POWER PLANT SECTION

REDUCING POWER COSTS THROUGH UNIT TREATMENT

Conducted by **Reginald Trautschold Consulting Engineer**

Cranes, Hoists, Tractors and Trucks

II—Cutting Materials Handling Costs

(Continued from February 19, 1931)

Overhead trolley hoists operated from the floor of the trolley cabs, used on and in conjunction with transfer cranes and bridges have also effected marked economies in several mills and typify a system of materials handling of marked flexibility and low operating cost. At the Tyrone, Pa., plant of the West Virginia Pulp & Paper Company there are seven of these crane-hoists in use, three in the finishing room, two serving the rewinders and one each in the machine and super-calender rooms, concerning which excellent satisfaction is reported.

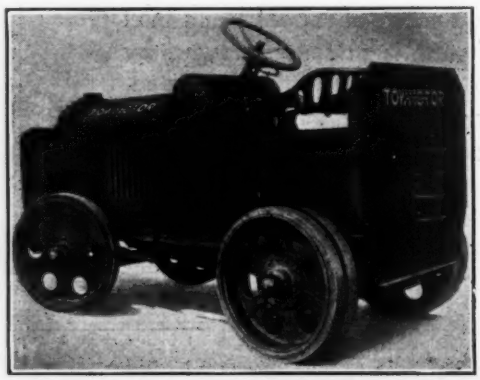
In the machine room, two men with the aid of the crane-hoist pile the rolls of paper in tiers four or five rolls high, a task which would tax the ability of five or six men working without the aid of the crane. Before the installation of the crane, skids were used, the rolls of paper being pushed up into place, but this was not only an arduous task, but took about ten times as long. In shipping the paper, important savings are likewise realized, for the present practice is to use the hoist for taking the rolls from the storage pile and placing them on electric trucks, a system of handling which easily enables as much as four car loads of paper to be dispatched per day.

A 2-ton crane-hoist in the machine room takes the rolls from the machine and loads them on hand trucks, while in the super-calender room the crane places the rolls in the super-calender. The loads on these hoists run as high as 3,600 pounds, yet they are easily handled, not by trained crane operators, but by any and all of the regular mill force.

At the Cleveland, O., plant of the Hinde & Dauch Paper Company, a 3-ton transfer crane has been in use for ten or twelve years which exemplifies another system of overhead handling which

Courtesy: The Towmotor Co.

FIG. 2.
Handling approximately 12 tons on a 7 per cent grade.

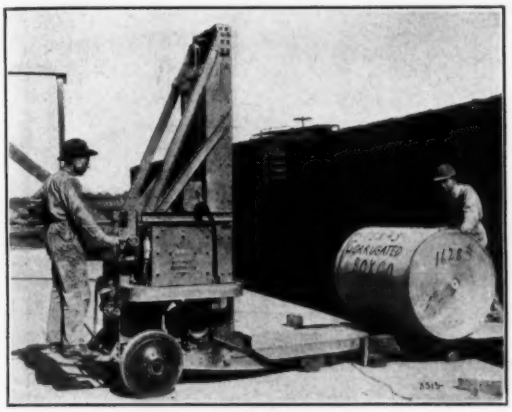


Courtesy: The Towmotor Co.

FIG. 1.
Sturdy, modern gasoline tractor.

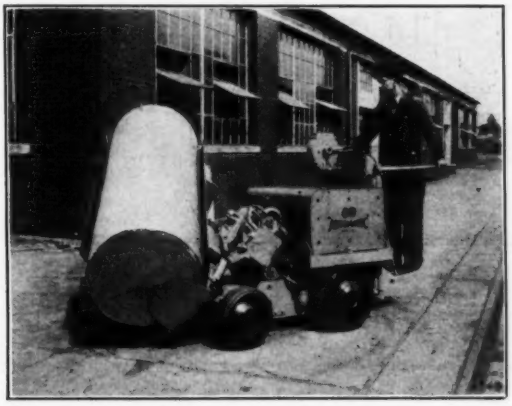
Courtesy: Yale & Towne Mfg. Co., Stuebing Div.

FIG. 3
Modern, high-speed, hand lift truck.



Courtesy: Automatic Transportation Co.

FIG. 4.
Saving 60 to 75 per cent in labor charges loading box cars —Texas Corrugated Box Co.



Courtesy: Automatic Transportation Co.

FIG. 5.
Transporting 2,000 pound rolls requires only one man and an electric truck.

has proved eminently satisfactory. There are three motor-driven bridges, one in each of the three bays comprising this plant, and a monorail hoist operated from a cab passes from one bridge to another and is thus able to cover the entire floor area. The system has proved very fast, flexible and well capable of handling all the material which has to be transported in the plant.

Tractors and Trailers Cut Costs

The use of tractors and trailers has also been quite instrumental in the reduction of materials handling expenses in some mills; at the New York and Pennsylvania Company plant at Johnsonburg, Pa., to cite a specific example, where trains of trailers handling rolls of paper and drawn by storage battery tractors have been in service for the past fifteen years. Also at the Kimberly and Niagara, Wis., plants of the Kimberly-Clark Corporation, where they have proved their ability to operate efficiently in even congested quarters and to negotiate sharp curves and turns.

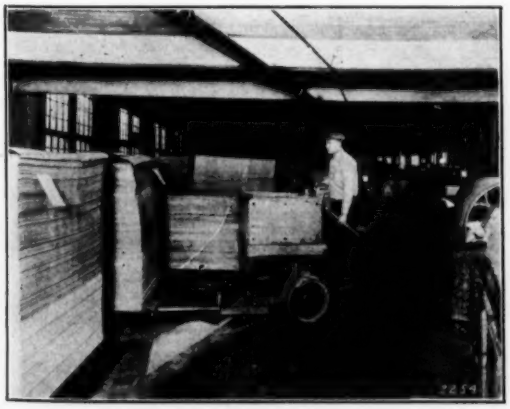
At the latter plant, tractor trains negotiate a 5-foot platform, the train running down the platform and the individual trailers being dropped off at the freight car doors for loading. The trailers are run into the box cars and loaded, while the tractor, which is approximately 6 feet in length, turns around on the narrow platform and picks up the loaded trailers on its return trip.

The gasoline tractor also offers decided advantages as a materials handling tool in and about the paper mill. It is a cheaper and more rugged contrivance, as a rule, with greater pulling capacity, particularly on grades, and operates at approximately constant efficiency for long as well as short periods of continuous service. One concern operating both electric and gasoline tractors reports that the average daily cost of operating the gasoline units, exclusive of the operator's wage, is approximately 85 cents, including repairs, while the electrics costs about $3.00 a day. The fire hazard is also held to be less by the insurance interests, than in the case of electric tractors.

Trucks of various types are indispensable materials handling tools in most mills, of course, and while these units were discussed at some length in these columns on February 5, 1931, the accompanying collection of selected views will serve to give added prominence to the part played by these devices in cutting materials handling costs. A few additional comments may also be made appropriately.

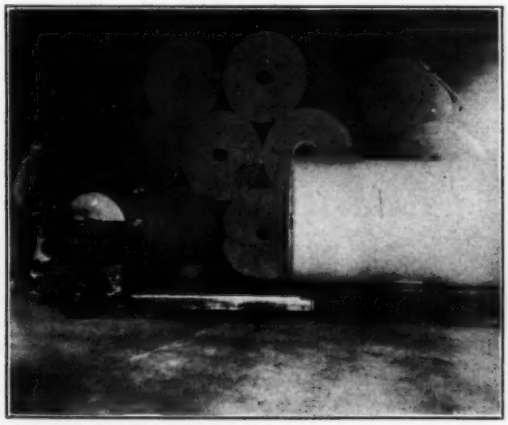
The use of electric trucks at the Texas Corrugated Box Company, tiering lift-type, for handling heavy paper rolls from storage to box cars is said to have cut labor costs from 60 to 75 per cent and to have greatly speeded up car loading time. Handling flat stock with elevating platform trucks, electrics, in 4,000 to 5,000 pound loads requires the service of only one man in another plant, where formerly five men had to be employed to handle the material.

At the Champion Coated Paper Company's plant at Hamilton, O., there are eleven electric trucks of one make in service, including elevating type trucks suitable for handling the low skids commonly employed with hand lift trucks, several trucks with a



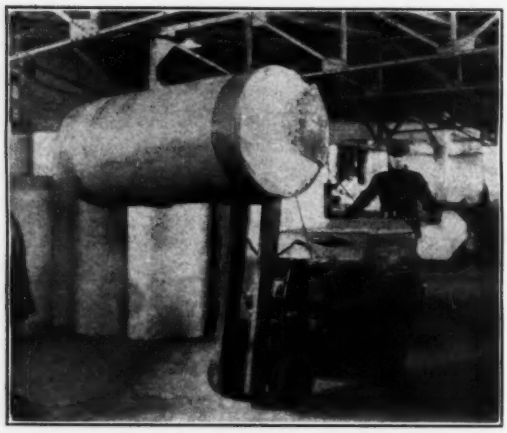
Courtesy: Automatic Transportation Co.

FIG. 6
Modern electric trucks handle 4,000 to 5,000 pound loads of flat stock easily, traveling at 5 miles an hour and parking closely.



Courtesy: The Baker-Rauling Co.

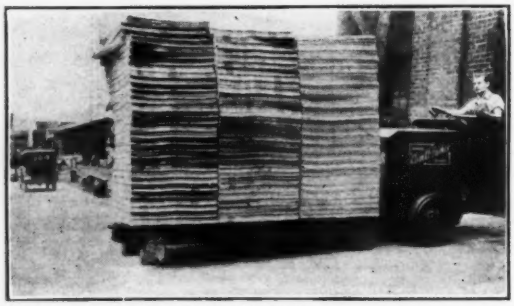
FIG. 7.
Full skid loads readily handled by electric lift truck at the Upson Co., Lockport, N. Y.



Courtesy: The Elwell-Parker Electric Co.

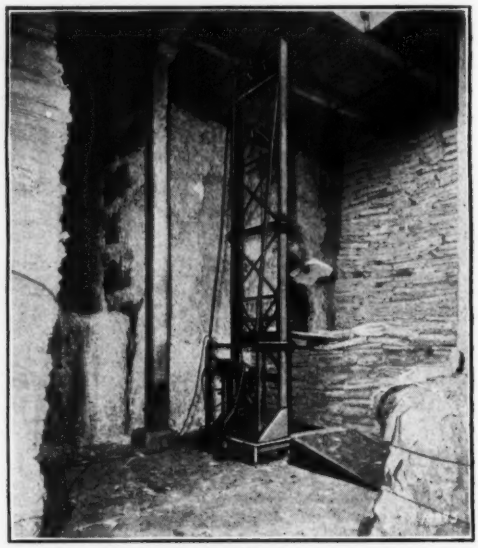
FIG. 8.
Heavy rolls easily picked up and handled by modern electric trucks.

lift range of from a few inches to several feet and a number of utility trucks, some with platforms of 28 square foot area and some smaller. Each of these trucks is reputed to do the work which would require four to five men for manual handling at



Courtesy: The Elwell-Parker Electric Co.

FIG. 9.
A full skid load of flat stock is not hard to handle with a modern electric lift truck.



Courtesy: Economy Engineering Co.

FIG. 10.
Heavy duty machine after about twenty years of piling bales of waste paper and bundles of pulp at the Container Corporation, Chicago, Ill

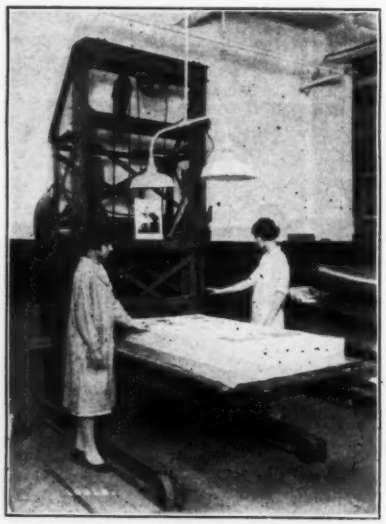
approximately $4.00 a day each and the total investment entailed for the eleven trucks with batteries, six extra batteries and charging equipment to service eight trucks at a time was a matter of $30,000.00.

Cost figures compiled at this mill place the total net cost of operating these trucks at less than 90 cents per hour, per truck, the individual expense items being allocated as follows:

Cost Data per Truck per Year

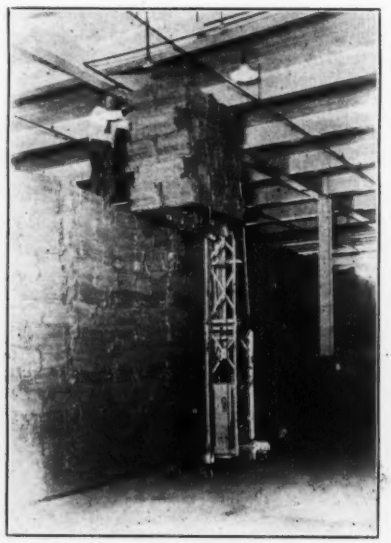
Labor	$2,062.21
Taxes and depreciation	733.42
Repairs	34.12
Operating supplies & expense	8.27
Maintenance, labor & overhead	179.42
Power, 2,995 kwh. at ¾c	22.46
Total expense	$3,039.90
Hours operated	3,399
Cost per hour	$0.894

The Baker-Rauling Co.



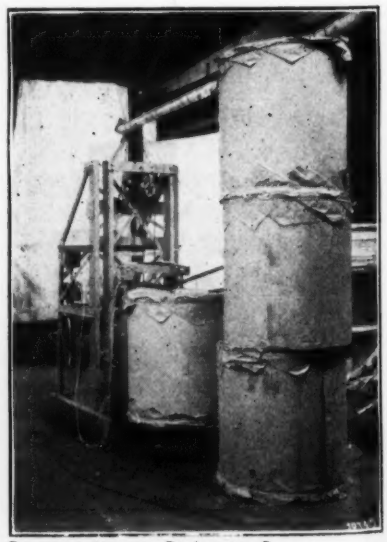
Courtesy: Economy Engineering Co.

FIG. 11.
Inspection entails no stooping at the Condé Nast Press at Stamford, Conn.



Courtesy: Economy Engineering Co.

FIG. 12.
Elevating skid platforms of paper stock for storage at Taggart Bros. Co., Inc., Oswego, N. Y.

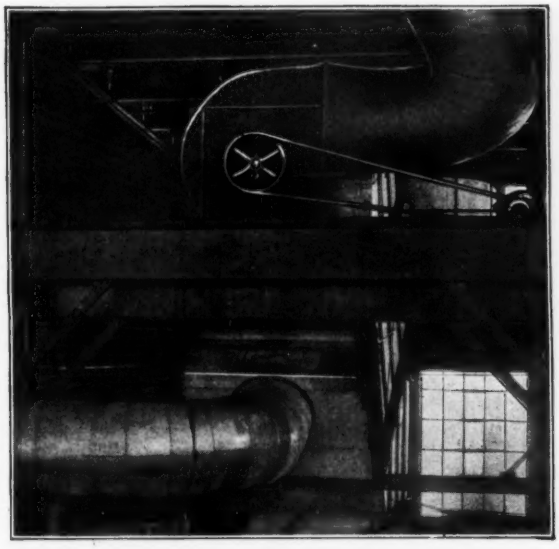


Courtesy: Economy Engineering Co.

FIG. 13.
Tiering rolls of paper with the aid of a modern portable elevator and tiering machine.

Here—in this corner

. . . is the reason for low heating cost. . .



Briner Economizers

Licensed Under Patents of E. A. Briner and John E. Alexander

The steam requirements of former years are being materially reduced this winter for scores of mills. The saving is apparent in boiler loads—in the costs for steam per ton of paper dried—in the machine room operating expense. And the source of these savings are the Briner Economizers—conveniently located in corners, on balconies and even on roofs.

The most troublesome heating, ventilating and drying problems have been overcome, costly alterations to roofs and machines avoided—merely by the proper application of the Briner Economizer principle of reclaiming valuable heat units from waste vapor. Proven by years of satisfactory performance to be the most efficient and economical method for saving on steam.

For machine rooms, grinder rooms and in connection with your vapor absorption.

J. O. ROSS ENGINEERING CORPORATION

201 North Wells Street
CHICAGO

Main Office—122 E. 42nd Street
NEW YORK

311 Lewis Building
PORTLAND, ORE.

ROSS ENGINEERING OF CANADA, LIMITED

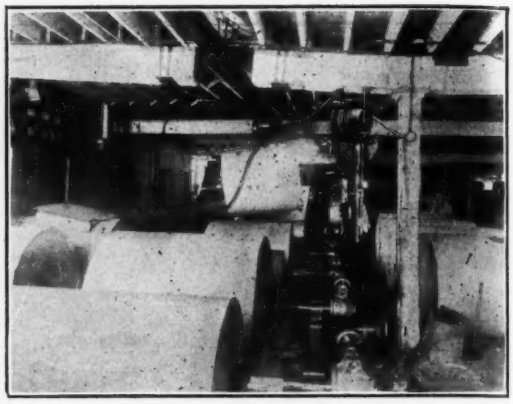
NEW BIRKS BLDG., MONTREAL

ROSS SYSTEMS

HEATING—VENTILATING—DRYING

Courtesy: Appleton Electric Co.

FIG. 17.
Cable connection to portable bridge elevator reeled out of harm's way in stock room of prominent newspaper.



Courtesy: Appleton Electric Co.

FIG. 18.
Cable connection to monorail hoist at the Plastergon Wall Board Co., Buffalo, N. Y., is kept clear of all entangling mishaps.

Just what savings these figures represent may be gathered from comparison with just one handling operation as formerly conducted. Paper rolls are transported from one building to another across a city street and a gas road truck was used for this work prior to the introduction of the electrics. While the operation of the gas truck was not expensive, it required a dozen men working 10 hours a day to handle the rolls manually inside the plant, entailing a labor charge of $66.20 per day, $6.62 per hour. Two electrics at 90 cents per hour, working 24 hours a day, now handle not only the transportation across the street but all the handling in the plant which previously required the services of the dozen men. All operations now entail a daily expense of $21.60, including the wages of the operators of both electrics, a net saving of $44.60 a day, or more than $13,500.00 per year.

Elevators, Portable and Fixed, Effect Big Savings

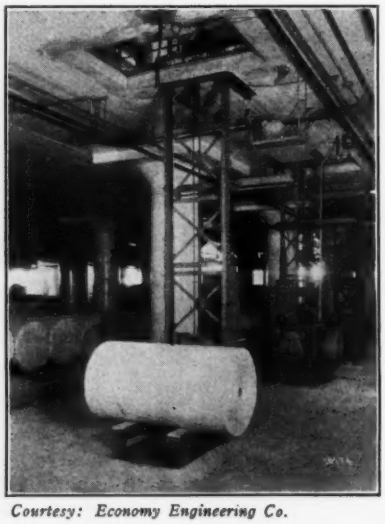
The collection of elevators for storage and tiering services is particularly noteworthy and illustrate still another materials handling tool which has become well nigh indispensable in caring for the requirements of mills, warehouses and large users of paper. The machine shown handling bales of wastepaper and bundles of pulp at the Container Corporation, Chicago, Ill., is especially interesting as this particular portable has been piling such material to a height of some 20 feet and operating in narrow aisles and in congested quarters for something like twenty years.

An unusual application of this type of machine, modified to meet distinctly local requirements, is that in the inspection room of the Condé Nast Press at Stamford, Conn., where it is used for the particular purpose of maintaining the elevation of the top of a pile of papers at the correct height for convenient inspection, the rise and fall of the elevator platform being under the control of a push-button station. Some 4,500 pounds of printed sheets are brought to and placed on the platforms of the machine by a hand lift truck and as the girls inspect and remove the sheets from the top, the machine platform is gradually raised so there need be no fatiguing stooping on the part of the inspectors or excuse for carelessness in inspection.

Another interesting case of realizing substantial savings by virtue of the use of these portable, tiering elevators is that of the paper jobbing concern, Bradner-Smith & Company, of Chicago. Skid loads of paper weighing approximately 3,000 pounds each are brought to the warehouse and stored with one of these machines two skid loads high at the rate of about six per hour. This is about six times as fast as the work could be done if the individual

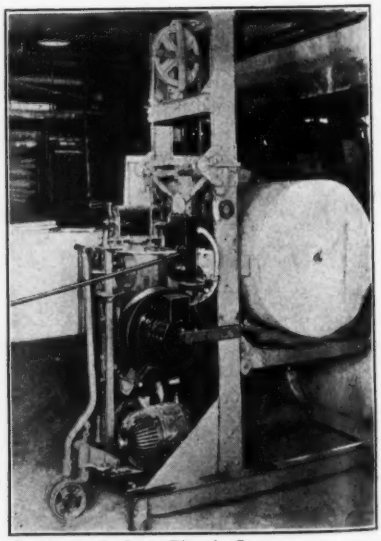
Courtesy: Economy Engineering Co.

FIG. 14.
Storing skid loads of paper six times as fast as the packages can be disposed of by hand at Bradner-Smith & Co., Chicago, Ill.



Courtesy: Economy Engineering Co.

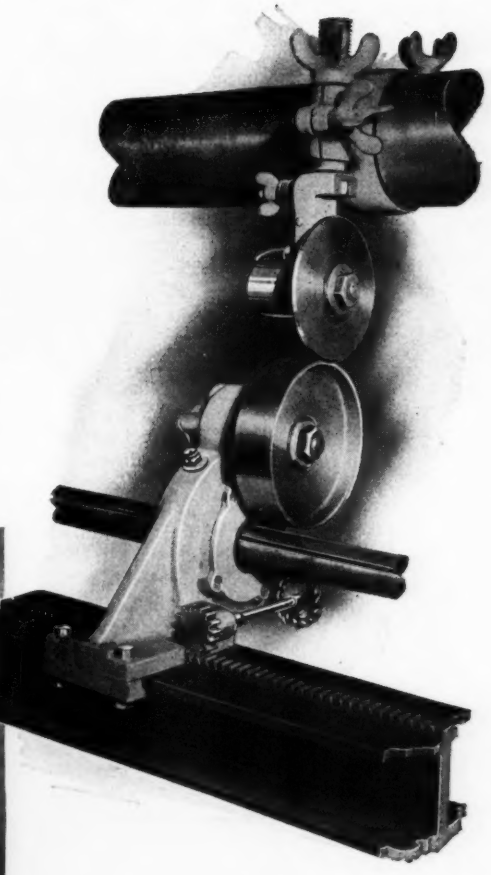
FIG. 15.
Floor to floor paper roll elevators cut materials handling costs.



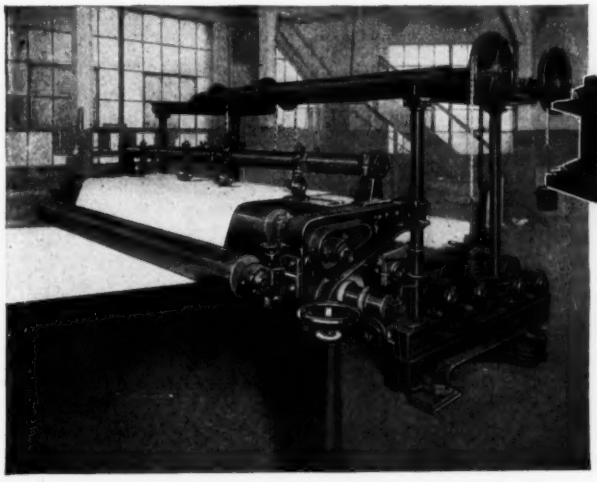
Courtesy: Appleton Electric Co.

FIG. 16.
Slack of conductor connection to portable electric elevator taken up by reel.

Long life and quick replacement



YOUR Slitter Blades will run true and cut clean if they are mounted on the ball bearing blade shafts of the new M & W Slitter. When they need regrinding, both top and bottom blades are removed by simply undoing the one nut holding each blade on its shaft.



You can get at any blade—top or bottom, side or centre—without disturbing any other blade and without dismounting the shaft. There's no temptation to take a chance with dull blades.

The drive shaft itself runs in ball bearings, at one-third the blade speed. There's no vibration, and no chance for a loose fit between blade hub and shaft to cause wabble.

Use the new M & W Slitter Parts ahead of the Winders. Use the Slitters also in connection with your Cutters.

For longest possible life, use the new M & W Slitter Blades of Special Metal. When mounted free from wabble, they outlast ordinary blades three to one or better.

THE MOORE & WHITE COMPANY
Established 1885
PAPER MACHINE BUILDERS
15TH ST. & LEHIGH AVE. PHILADELPHIA, PA.

See description in recent catalog on Four Drum Winders and Slitters: write us if you haven't received your copy.

packages were handled by hand, besides which the elevator tiers the skid-loads two high while manual handling would require about twice as much space, as it would not be feasible from a practical standpoint to pile the packages up more than one skid-load high. This saving in floor area alone is valued at several hundred dollars a year.

The final three views, depicting materials handling tools in obviously cost cutting services, illustrate a refinement as well which in itself may prove to be a very valuable accessory. The electric connections to these particular materials handling tools, as is quite general with such forms of apparatus, are made from fixed outlets through cables of considerable length. In these three installations, the slack of the cable, which permits the machines to be moved about over a considerable area, is taken up by a real device, keeping the aisles and passages free from entangling cords and protecting the cables from damage.

Any and all these materials handling tools, even the last mentioned accessory, can be very instrumental in cutting materials handling costs and the examples which have been cited and the illustrations presented aim simply to depict individual and diverse operations forming part of a more complex materials handling system. They may form, some of them, valuable links about which to build up a complete handling system or as links they may prove profitable substitutes for less valuable links in an existing system. Then again, while the instances cited are worthy of study by any mill, they may not be adaptable to rigid local conditions. It is even possible that a reduction in materials handling costs can be effected best without much, if any, aid from materials handling tools.

As previously stated, some of the greatest cuts in materials handling expenses have been effected chiefly through a better routing of materials and of work in progress, but whatever may be the best solution, familiarity with available materials handling tools and their service records under differing conditions is essential. This entails painstaking investigations of the various tools, of the various links making up a complete system, even more than it does of the system in its entirety, which can rarely be adopted without radical and necessary modifications and alterations. "Cost reduction through unit treatment" applies as aptly to cutting materials handling expenses as it does to power cost reductions.

I. P.'s Fourth Quarter Earnings Increase

Preliminary figures for the last quarter of 1930 indicate earnings of International Paper and Power Company of $1,950,000 after depreciation and other charges. Not only does this give a margin over preferred dividend requirement for the quarter as a whole, but earnings for each of the months of the quarter were in excess of monthly dividend accrual. Preliminary figures for the full year 1930 indicate net, after depreciation and other charges of about $4,200,000, or more than $4.50 a share on the outstanding preferred stock.

The sharp increase in the fourth quarter was due in part to increases in contract deliveries by Canadian power subsidiaries, to improved manufacturing efficiency, and to substantial savings in administration expenses effected during the fall.

Southeastern Superintendents To Meet

The Southeastern Division of the American Pulp and Paper Mill Superintendents Association is planning to hold its spring meeting at Richmond, Va., April 10 and 11 in the Jefferson Hotel. Rates are very reasonable and reservations should be made direct with N. K. Whitman, manager, Jefferson Hotel, Richmond.

The program has not been completed but plans are well under way for a successful meeting. A hearty invitation is extended to members and friends of the Southeastern Division as well as their wives. Friday will be devoted to papers, round table discussions, etc. Saturday will be open for sight seeing, golf, etc.

New York Trade Jottings

O. F. Swanson, sales manager of J. Andersen & Co., and the Pulp and Trading Company, New York, is visiting Holyoke, Mass., this week.

* * *

The American Paper Products Company, of 141 West 20th street, New York, has leased space in the Port Morris Industrial Terminal, 140th street and East River, the Bronx. The unit has both railroad sidings and docking facilities.

* * *

Japan Paper Company, of 109 East 31st street, New York, is now carrying in stock "Vasari," an interesting mould-made paper from Italy, with characteristics of special distinction as a text or cover stock.

* * *

Major Oliver M. Porter, secretary of the National Kraft Paper Manufacturers Association, with headquarters in the Chanin Building, New York, is in Chicago this week, arranging for the transfer of the offices of the organization to that city in the near future.

* * *

The Alvah Bushnell Company, makers of Paperoid envelopes, filing containers, and similar products, have removed their New York offices from 311 Broadway to 434 Broadway. The local offices are under the management of H. C. Landon.

* * *

L. H. Larson has resigned his position with the Kalbfleisch Corporation, and is now associated with the paper mill department of the R. T. Vanderbilt Company, Inc., of 230 Park avenue, New York, in the capacity of sales and service engineer.

* * *

William H. Anders, formerly secretary of the Perkins-Goodwin Company, New York, has been elected president and treasurer of the Nashua River Paper Company, East Pepperell, Mass.

* * *

The *New York Daily News* is installing a complete paper testing laboratory on the eighth floor of the News Building, where experimental studies of qualities of news print paper will be conducted by William Baumrucker, Jr., paper technician.

* * *

The Eastern Division of the Salesmen's Association of the Paper Industry held its regular weekly meeting and luncheon last Tuesday at George's Restaurant, New York. General business conditions and various vital matters of interest to the members were freely discussed by those present.

* * *

Annual report of the Corn Products Refining Company, makers of special paper starch, of 17 Battery Place, New York, for 1930 shows income of $14,067,689, equal to $4.86 a share on the common stock outstanding after preferred dividends, compared with net of $16,309,651 or $5.75 a share available for the common in 1929.

* * *

E. Kenneth Hunt, advertising manager of the Champion Coated Paper Company, of Hamilton, Ohio, is scheduled to address the School for Printing Pressmen on "Paper" in the Machinery Auditorium of the Grand Central Palace, New York, on Wednesday next, March 11. The talk will be illustrated by moving pictures showing every operation of paper making in the Champion plant.

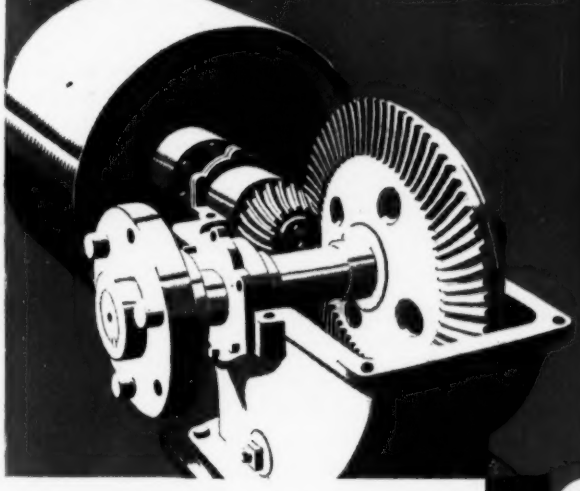
The World's Largest Barker

MONTREAL, Que., March 2, 1931—At the Port Alice plant of the British Columbia Pulp and Paper Company good progress is being made in the installation of the world's largest wood barker. The new equipment is designed to make use of 100 per cent of the tree, including knots and tops. The chipping plant to be used in connection with the barker has already been installed.

FULL FINGER TIP CONTROL

...and SUCH Control

SIMPLE



with

BAGLEY & SEWALL

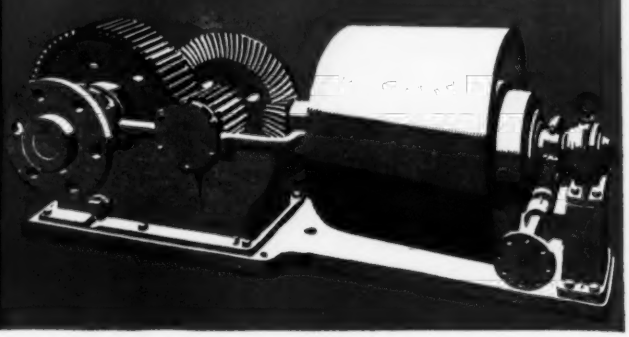
All Metal

Spiral Bevel Gear

DRIVES

Modern drives that provide a degree of simple, positive, precise operation and control never before attained. Two types and four sizes serve every paper machine need with complete satisfaction.

COMPOUND



Compact **— requiring but one-quarter the floor space of old type drives of equivalent power.**

Vibrationless **— minimizing broke and wear on wires, felts and rolls.**

Full Lubrication **— gears completely immersed in oil, with splash feed to all contacts.**

Velvety Starting **— through positive clutches of either magnetic or multiple disc type.**

Anti-friction Bearings; Sturdy Stands; **and *Efficient Performance* that in one representative installation has reduced maintenance costs $1650 a year per machine.**

Quickly installed as units or complete systems, without interrupting production. Write for full details.

The Bagley & Sewall Co.

Watertown, N.Y.

57

PAPER TRADE JOURNAL

ESTABLISHED 1872

Published at 34 North Crystal St., East Stroudsburg, Pa. Executive and Editorial Offices, 10 East 39th St., New York, N. Y.

Henry J. Berger
Editor

Ronald G. Macdonald
Editor Technical Section

Herbert J. Laughton
Associate Editor

Thomas J. Burke, C. A.
Editor Cost Section

Reginald Trautschold, M. E.,
Power Engineering Consultant

Lynne M. Lamm, *Washington Correspondent*

Price, Per Copy, 10 Cents United States, Per Annum, $4.00
Canada and Foreign Countries in Postal Union, $6.00

Member Audit Bureau of Circulations

Vol. XCII New York, March 5, 1931 No. 10

MERGER RUMORS IN CANADA

Once more rumors are rife regarding big reorganizations in the newsprint industry in Canada, and once more Canada Power and Paper Corporation is the centre of these rumors. One paper announces that the financial structure of this company is likely to be thoroughly overhauled with a view to simplifying it and possibly reducing the debenture interest "Information from a reliable source" is given as warranting the statement that various plans to this end are being considered. On the other hand, another paper on the same basis that some close arrangement between Canada Power and Paper and International Paper Company is being worked out. You pay your money and you take your choice. Some support for the later theory is found in a flying visit to Montreal of President Graustein, of the International.

It is possible that both theories may be right—that Canada Power and Paper may effect some simplification of its financial structure as a preliminary to a consolidation of interest with the paper end of the International's enterprises in Canada. To date it is said that Canada Power and Paper has made excellent progress in reducing costs and increasing all around efficiency at its mills, but the stumbling block always has been the heavy fixed charges and preferred dividend requirements.

The recent passing of the dividends on the preferred stocks of subsidiary companies means a saving to Canada Power and Paper of approximately $2,500,000. The market valuation of the debentures apparently forecasts the interruption of interest payments on both series when the next due date comes around in July. If the interest on the debentures is passed, this will save a further $2,000,000. At 45 per cent of capacity operation, this would indicate a total saving of more than $12 per ton.

A consolidation of Canada Power and Paper with International would clear the way for a merger with other leading newsprint companies in Eastern Canada, as it has been generally realized that Canada Power and Paper has been the chief stumbling block in the negotiations which hae been carried on.

MECHANICAL HANDLING

What is expected to fill an important industrial need has been announced for the week of November 30 to December 5, inclusive, in Grand Central Palace, New York. This is to be the first National Exposition of Mechanical Handling, an initial effort to feature exclusively this special type of equipment. This exposition will be conducted under the same management as the National Exposition of Power and Mechanical Engineering, the International Heating and Ventilating Exposition, the Chemical Industries Exposition and the National Hotel Exposition—all of which are under the management of the International Exposition Company.

Special sections devoted to mechanical handling equipment have been successfully part of the above-mentioned shows in the past and exhibitors have urged that a separate and exclusive display in this field be offered. After a careful survey the International Exposition Company decided to inaugurate the new Exposition.

Grand Central Palace affords facilities for every type of material handling equipment. Large and heavy installations will be accommodated on the main floor; conveyor systems, cranes, tramways and other overhead equipment, requiring spacious area and considerable height can be installed and operated in the large court of the main and mezzanine floors.

A list of tentative exhibits includes Ash Hoists, Conveyors, Barrell Making Machinery, Battery charging apparatus, box making machinery, blocks, brakes, capstans, chutes, computing devices, containers, conveying equipment, engines, excavating and road building machinery, flumes, folding and closing machines, forming, drying and seaming machines, fuel and refuse handling, gravity conveyors, haulers, hawsers and rope, labels and brands and stencils, lithography, lubrication systems and lubricants, material handling, (horizontal and vertical), motors, packing and packing machines, platforms, pumps, production machines, recording instruments, road building machinery, shipping room equipment, shook making machinery, slings, storage batteries, swivels, transmission equipment, transportation, unloaders, weighing machinery, winches, windlasses, wire and steel strip tying material and miscellaneous material including handling devices, accessories, etc.

The offices of the International Exposition Company are in the Grand Central Palace, New York City. Charles F. Roth is manager of the Exposition.

UNDERVALUATION OF KRAFT

The question of undervaluation of kraft paper imported from Sweden is before the customs officials in the belief that the price at which this paper is exported to the United States is below the home market value. Total imports of kraft wrapping total about $750,000 per year, and nearly all is of high quality. The import Committee of the American Paper Industry has long been contending that the paper was not being properly valued for duty purposes, as the result of a technical decision by the customs courts before the Import Committee was formed. If the situation is as represented, a new test case will result.

Recent decisions by the United States Customs Court, according to the Import Committee, have resulted in higher classification or

the finding of a higher dutiable value on importations of waxing tissue, heavy kraft wrapping paper, ground wood book paper, side run news, the value of the paper involved being estimated at some $25,000.

Customs officials have classified a wide variety of papers under provisions involving a higher duty payment than the classifications claimed by the importers. Among the papers so acted upon are bible paper, lamp shade board, mottled drawing paper, trunk wrapper paper, fibre board, waxing cartridge paper.

Paper Making in Hudson Falls

[FROM OUR REGULAR CORRESPONDENT]

HUDSON FALLS, N. Y., March 2, 1931.—A booklet compiled by Albert W. Spencer, consulting engineer of the Chamber of Commerce, gives some interesting facts regarding the early history of paper manufacturing in this section. It points out that the production of paper was commenced here about 1845 and expansion immediately followed as soon as the advantages of cheap operating power and the economic location with reference to raw materials were recognized. In that year a new dam and paper mill was erected where it is claimed that manila paper was produced for the first time in this country. In 1846 another large mill was built for production of the same product which was changed over to turn out wall paper in 1850 and the village now boasts of the largest wall paper factories in this country.

The booklet further on claims that in 1849 the water power rights and ancient mills in a section of the village were taken over for production of lumber on an extensive scale. A few years later this industry was replaced by a pulp mill prior to the erection of another paper mill. Soon after the introduction of the manufacture of paper other industries started making inquiries and it was not long before other products such as paper bags, wall paper and paper mill machinery were being turned out and it was in this manner that village became noted as a manufacturing center.

Industrial Paper & Cordage Co. Organized

PAWTUCKET, R. I., March 2, 1931.—The Industrial Paper and Cordage Company, located at 48 Broadway, this city, has recently been organized and incorporated in the State of Rhode Island to buy and sell all kinds of wrapping papers and paper products also all kinds of cordage for wrapping purposes as well as converting purposes. The officers of the company are Charles K. Shaw, president, who is also president of the Shaw Paper Box Company, of Pawtucket; Henry C. McDuff, vice-president, who is also president of the H. C. McDuff Lumber Company and the Darlington McDuff Coal Company, of Pawtucket, and James C. Campbell, secretary, treasurer and general manager.

Mr. Campbell has been for the past five years acting as Rhode Island manager for the Andrews Paper Company, of Boston and previous to that he was affiliated with the Providence Paper Company of Providence, R. I.

The main office and warehouse of the company are located at 48 Broadway and it is the desire of the new company to serve the trade in the state of Rhode Island and southeastern Massachusetts.

Norwegian Wood Pulp Production

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 4, 1931—Wood pulp production by Norwegian mills during the calendar year 1930 is reported at 157,275 tons for bleached sulphite, 124,394 tons for unbleached sulphite, 21,527 tons for sulphate pulp, and 503,616 tons for mechanical ground wood, according to Commercial Attache M. H. Lund, at Oslo.

Meeting of Paper Research Committee

The Research Advisory Committee of the Pulp and Paper Industry met jointly with the paper section of the Bureau of Standards, November 18, 1930. This is a joint committee of the American Paper and Pulp Association and the Technical Association of the Pulp and Paper Industry, appointed for the former to keep the paper industry informed on developments in paper research, and to act as a contact medium between these associations and organizations conducting paper research.

This meeting was held at the invitation of the bureau in order that the committee might obtain detailed information on the paper researches of the bureau. Mr. Ernst Mahler, chairman, stated in opening the meeting that no action of an advisory nature would be undertaken by the committee until they had completed a national survey of the status of paper research.

At the request of the committee chairman and in response to inquiries from the committee members, the following subjects were discussed: functions of the paper section as related to those of the other national government laboratories, types of researches made and details of projects in progress, degree of co-ordination between these researches and those of similar type carried on elsewhere by the national government detailed cost data of the researches and how they are financed. Relative to the last, the chairman complimented the bureau on the low cost of its paper research accomplishments.

At the completion of the joint meeting, as this was the first meeting of the committee, it held an executive session to complete its plans for its further studies of paper researches.

All members of the committee were present except Dr. Bjarne Johnsen, who is abroad. The committee members who attended are as follows:

Ernst Mahler, chairman, vice-president, Kimberly-Clark Corp., Neenah, Wisconsin.

Mr. Krimmel, president, Technical Association of the Pulp and Paper Industry, assistant director of laboratories, Hammermill Paper Company, Erie, Pa.

R. G. Macdonald, secretary, Technical Association of the Pulp and Paper Industry, New York, N. Y.

Rex W. Hovey, technical director, Oxford Paper Company, New York, N. Y.

Miss Helen U. Kiely, chief chemist, American Writing Paper Company, Holyoke, Mass.

W. G. MacNaughton, engineer, International Paper Company, New York, N. Y.

R. H. Stevens, chief chemist, Bogalusa Paper Company, Bogalusa, La.

Jesse H. Neal, ex officio, general manager, American Paper and Pulp Association, New York, N. Y.

Crown-Willamette Objects

The Crown-Willamette Paper company is making objections to the Willamette river improvement project now being forced on federal attention by the Oregon City Chamber of Commerce, the Portland Chamber of Commerce and the East Side Commercial club, looking toward deepening of the channel of the river between Portland and Oregon City. The sponsors of this enterprise have already secured an appropriation of $167,000 providing that Oregon City shall raise $50,000 additional.

As property of the paper mills is adjacent to the river the company would of necessity be included in this development tax and its contention is that the increased depth of the river resulting from this development could be of little benefit to large industries along the river as a power source because costs would be too high. Instead the company has suggested that the river be deepened 8 feet with a width of 150 feet, including changes in the lower lock level.

The purpose of the deepening project is to secure materials for building a new superhighway. The spoils of the dredging process would be used for necessary fills.

HIGH SPOTS IN CHEMICAL HISTORY

No. 1 of a series of advertisements tracing the development and uses of modern chemicals

AMMONIA

To Joseph Priestley belongs the distinction of establishing the fact that ammonia is composed of hydrogen and nitrogen.

IN 1774, Joseph Priestley, heating a mysterious looking substance over a fireplace, drove a protesting family from his humble cottage in Leeds, England. The biting, pungent fumes came from ammonia—a mixture of nitrogen and hydrogen which the chemist-minister had collected over mercury. More than one hundred and fifty years later the same colorless gas was to become one of the world's most useful commodities.

Today, the manufacture of synthetic ammonia together with improved methods for its transportation and handling, mark one of the greatest triumphs of chemical engineering. Thousands of tons of ammonia are used annually by the refrigeration industry. The use of ammonia for making nitric acid has effected exceptional economies in producing explosives, synthetic fabrics and other cellulose products. The manufacture of high nitrogen fertilizers from ammonia seems destined to render American agriculture independent of foreign sources of supply.

Anhydrous ammonia is used to supply nitrous gases in manufacturing sulphuric acid ...in nitriding steel, which is equivalent to case hardening... for neutralizing acids in oil refining...as a raw material in organic synthesis...as an important source of hydrogen or nitrogen in welding operations.

One of the most important recent developments in the use of ammonia in combination with chlorine is in treating water supplies. Preammoniation treatment of water prevents unpleasant tastes and odors, increases the efficiency of chlorine and is simple and economical to apply.

Constant improvements in manufacturing processes have given American anhydrous ammonia users the benefits of a most economical and most useful alkali—one of several circumstances that has speeded the progress of chemical engineering.

. . .

As one of the oldest producers of synthetic anhydrous ammonia in the United States, Mathieson is able to offer ammonia users the product quality and complete service available only where modern, economical methods of production and distribution prevail.

MATHIESON CHEMICALS

Great Structures Rest on Strong Foundations

MATHIESON CHEMICALS
SERVICE
RESOURCES | RESEARCH

Soda Ash . . . Caustic Soda . . . Bicarbonate of Soda . . .
HTH (Hypochlorite)...Liquid Chlorine...Bleaching Powder...
Ammonia, Anhydrous and Aqua...PURITE (Fused Soda Ash)

The MATHIESON ALKALI WORKS (*Inc.*)
250 PARK AVENUE, NEW YORK, N. Y.
Philadelphia Chicago Providence Charlotte Cincinnati
Works: Niagara Falls, N. Y., Saltville, Va. *Warehouse stocks at all Distributing Centers*

Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Bibliography of Papermaking for 1930

Committee on Abstracts and Bibliography, Contribution No. 53

Clarence J. West, Chairman

(Concluded from last week)

Rolls

Bain, J. T. The dandy roll and its work. Paper Mill 53, no. 20:22, 24 (May 17, 1930); World's Paper Trade Rev. 93, no. 13: 1182, 1184, 1186 (Mar. 28, 1930); Paper Maker 79, no. 4:379, 383, 385 (Apr., 1930); Paper Makers' Mo. J. 68, no. 4:149-151 (Apr., 1930).

Bensau, K. The couch roll and its work. Wochbl. Papierfabr. 61, no. 15:471-474 (Apr. 12, 1930).

Brown, W. E. Rubber covered rolls. Paper Mill 53, no. 44: 20-22 (Nov. 1, 1930).

Crowning of couch press and wet press rolls. Paper Maker 80, no. 1:2-3, 13 (July, 1930); Annual no., 1930:57-59.

Employment and utility of dandy rolls. L'Ind. Papetiere, no. 108 (1930); Paper Maker, Annual no., 1930:19.

Grinding machines for rolls and cylinders. Papierfabr. 28, no. 1:5-7 (Jan. 5, 1930); T. S. 91:192.

Nuttall, T. D. Suction rolls. World's Paper Trade Rev. 93, no. 25:2292, 2294 (June 20, 1930).

Schmidt, Gerhard. Cellular suction rolls for dewatering fibrous materials, especially cellulose. Pappers- och Trävarutid. för Finland (Finnish Paper and Timber J.), 1930, no. 14:658-669; Wochbl. Papierfabr. 61, no. 4:116-121; no. 5:152-154 (Jan. 25, Feb. 1, 1930); Paper Maker 80, no. 4:363-365 (Oct., 1930); Annual no., 1930:74-75; Pulp Paper Mag. Can. 30, no. 22:614, 632 (Nov. 27, 1930); C. A. 24:5487; T. S. 91:164.

Schmidt, Gerhard. Suction rolls in the dehydration of mechanical pulp. Wochbl. Papierfabr. 61, no. 14:451-452 (Apr. 5, 1930).

Tewksbury, E. L. Rubber and rubber rolls. Paper Mill 53, no. 42:26, 28-29 (Oct. 18, 1930).

Rosin

Aschan, O., and **Enkvist, T.** Determination of solubility of commercial resin used for paper sizing. Pappers- och Trävarutid för Finland (Finnish Paper and Timber J.) 1930, no. 9:406-410; C. A. 24:5516.

Coburn, Hayward H. Acid numbers of dark colored resins. Paper Makers' Mo. J. 68, no. 5:193 (May, 1930).

Kaiser, H. E., and **Hancock, R. S.** Purification of wood rosin. Ind. Eng. Chem. 22, no. 5:446-448 (May, 1930).

Romaine, E. V. Development of the wood rosin industry. Oil Fat Industries 7:21-22, 29 (1930).

Savealls

Arledter, —. A new saveall. Papierfabr. 28, no. 12:202-205 (Mar. 23, 1930).

Karlstrom, A. A new saveall. Svensk Pappers-Tid. 33, no. 12:480-482; no. 13:515-516, 519 (June 30, Aug. 15, 1930).

Suction filters. Papierfabr. 28, no. 13:269-270 (Mar. 30, 1930).

Screens

Clapperton, R. H. Elimination of "dirt" from paper stock. World's Paper Trade Rev. 93, no. 2:114, 116, 118, 164, 166, 168, 170, 172 (Jan. 10, 1930).

Pauli, —. Screen consumption on paper machines. Wochbl. Papierfabr. 61, no. 33: 1074-1075 (Aug. 23, 1930).

Sterligov, —. The Bird sorter. Bum. Prom. 8, no. 7:28 (1929); Papierfabr. 28:485 (1930).

Shipping of Paper

Egan, Roger J. Should pulp be shredded, corrugated or smooth-pressed? Pacific Pulp Paper Ind. 4, no. 7:34-37 (June, 1930).

Munds, —. Experiences in modern packing of paper by the Signode system. Wochbl. Papierfabr. 61, no. 14:452-454 (Apr. 5, 1930).

Parker, J. W. Packing for shipment. Elec. R. (London) 107: 49-50 (July 11, 1930).

Trade approves the skid pack. Pacific Pulp Paper Ind. 4, no. 7:26-27 (June, 1930).

Use of skids and bracing for paper shipments. Pulp Paper Mag. Can. 30, no. 26:710 (Dec. 25, 1930).

Sizing

Acidity of tub-sized papers. World's Paper Trade Rev. 94, no. 9:758 (Aug. 29, 1930); Paper Makers' Mo. J. 68, no. 11:453 (Nov., 1930).

Arledter, Fritz. Old and new in the sizing of paper. Papierfabr. 28, Fest- u. Auslandheft, 130-131 (June, 1930).

Bleaching and rosin sizing. Papeterie 52, no. 18:1041-1042, 1045 (Sept. 10, 1930).

Chintschin, —. The influence of alkali upon the course of paper sizing. Delthirna sizing. Papierfabr. 28, no. 33:517-520; no. 34: 537 (Aug. 17, 24, 1930); Boll. staz. sper. carta 9, no. 9:109-111 (Sept., 1930); C. A. 24:5493; B. C. A. 1930B:943.

Codwise, Philip W. Determination of surface sizing. Paper Trade J. 90, no. 11:58-59 (Mar. 13, 1930); Paper Mill 53, no. 8:66, 68, 70 (Feb. 22, 1930); Tech. Assocn. Papers 13:200-201 (May, 1930); C. A. 24:1977; T. S. 91:203.

Delthirna sizing Process. World's Paper Trade Review 94, no. 25:2190, 2192, 2252 (Dec. 19, 1930).

Delthirna sizing system. Paper Mill 58, no. 33:4, 30 (Aug. 16, 1930).

Diamant, Erwin. The Delthirna sizing process. Tech. Chem. Papier Zellstoff Fabr. 27, no. 11/12:149-152 (Nov. 29, 1930).

TAPPI Section, Page 130

Edge, S. R. H. More experiments in connection with rosin sizing. World's Paper Trade Rev. 92, no. 22:1974, 1976; discussion, no. 23:2102, 2104; no. 24:2142, 2144, 2146, 2180, 2182, 2184 (Nov. 29, Dec. 6, 13, 1930); Paper Maker 78, no. 6:595, 597 (Dec., 1929); 79, no. 1:38-39, 43, 47-48 (Jan. 1, 1930); Paper Mill 53, no. 1:16, 22 (Jan. 4, 1930); Proc. Tech. Sect., Papermakers' Assocn. Gt. Britain Ireland 10, pt. 2:289-294; discussion, 294-301 (Mar., 1930); B. C. A. 1930B:759; C. A. 24:1505, 5493; T. S. 91:214.

Fournier, Raymond. Notes on sizing. Papeterie 52, no. 13:785 (July 10, 1930).

Glue and starch sized paper. Paper Trade J. 91, no. 1:51 (July 3, 1930).

Kumler, R. W. Use of wax in sizing paper. World's Paper Trade Rev. 94, no. 4:335, 337-338, 340 (July 25, 1930); Paper Mill 53, no. 23:14, 16, 20 (June 7, 1930); C. A. 24:5492.

Lafontaine, Gerald H. Beater sizing. Paper Ind, 12, no. 2:298h, 301 (May, 1930); World s Paper Trade Rev. 93, no. 25:2267, 2269-2270, 2272, 2274, 2276 (June 20, 1930); Paper Mill 53, no. 19:10, 20, 22, 24 (May 10, 1930); C. A. 24:5492.

McCollister, C. D. Sulphate of alumina. Paper Mill 53, no. 41:20-21 (Oct. 11, 1930); World's Paper Trade Rev. 94, no. 20: 1738, 1740 (Nov. 14, 1930).

Postl, H. Surface sizing. Zollstoff u. Papier 10, no. 1:36-37 (Jan., 1930); T. S. 91:277.

Ridley, C. N. Modern methods of rosin size manufacture. Ind. Chem. 6:369-371 (1930); Paper Makers' Mo. J. 68, no. 2:50-53 (Feb., 1930); C. A. 24:3364.

Roschier, H. The theory of sizing paper with rosin. Acta Chem. Fennica 2:48-52 (1929); C. A. 24:3900.

de Saint Hilaire, R. The Delthirna sizing process. Paper Trade J. 91, no. 3:55-56 (July 17, 1930); Paper Mill 53, no. 33:4, 30 (Aug. 16, 1930); C. A. 24:5492.

Silicate of soda. Survey of treatment to furnish in beaters and miscellaneous uses around mill. Paper Trade J. 53, no. 17:18-19, 35 (Apr. 26, 1930); C. A. 24:5484.

Solution of rosin soap and aluminum sulphate. Papeterie 52, no. 22:1382 (Nov. 25, 1930).

Starch sizing of highly-purified wood fiber papers. J. Franklin Inst. 210, no. 5:667-668 (Nov., 1930).

Swift, Marion B. Rosin sizing literature review. Paper Trade J. 90, no. 26:54-55 (June 26, 1930); Tech. Assocn. Papers 13: 232-233 (May, 1930); C. A. 24:5492.

Use of sodium silicate in paper making. Paper Mill 53, no. 36:26, 28 (Sept. 6, 1930).

Vail, James G. Silicate of soda in paper manufacture. Paper Trade J. 90, no. 23:93-95 (June 5, 1930); Paper Mill 53, no. 22:40, 42, 44 (May 31, 1930); World's Paper Trade Rev. 94, no. 2:154, 156 (July 11, 1930); Paper Maker 80, no. 1:22-23, 25 (July, 1930); Paper Making 49, no. 9:309-310 (Sept., 1930); C. A. 24:4154; T. S. 91:154.

Wieger, Bruno. New problems in sizing. Papierfabr 28, no. 8: 113-116 (Feb. 23, 1930); B. C. A. 1930B:608; C. A. 24:3363.

Williams, F. M. Williams' sizing process. Paper Mill 53, no. 44:16-17 (Nov. 1, 1930).

See also Rosin.

Slitters and Rewinders

Lambrette, A. Notes on transverse cutters. Pepeterie 51, no. 26:1414-1421 (Dec. 25, 1929); 52, no. 1:17-22; no. 2:130-134 (Jan. 10, 25, 1930); T. S. 91:233.

Soda Process

See Alkaline processes.

Specialties

Allen, K. L. Paper sack. Food Industries 2:19-20 (Jan., 1930).

Arnot, J. Melrose. Yellow wove. World's Paper Trade Rev. 93, no. 14:1234 (Apr. 4, 1930).

Belani, —. Impregnated papers. Papier-Ztg. 55, no. 68:1954 (Aug. 23, 1930). Medical papers.

Carson, F. T., and Worthington, F. V. A study of sheathing papers. Bur. Standards J. Research 3, no. 1:75-90 (July, 1929); Papier-Ztg. 55, no. 47:1400 (June 11, 1930); Papierfabr. 28, no. 34:536-537 (Aug. 24, 1930).

Creped papers. Zellstoff u. Papier 10, no. 12:873-874 (Dec., 1930).

Dodge, Charles. Offset papers. World's Paper Trade Rev. 93, no. 21:1898, 1900 (May 23, 1930).

Effect of the hygrometric state of the atmosphere on the production of sensitized photographic paper. Papeterie 52, no. 12:710, 713-714; no. 15:914, 917-918, 921 (June 25, Aug. 10, 1930).

Fournier, Raymond. Printing papers. Papeterie 52, no. 7:386, 389-390, 393-394 (Apr. 10, 1930).

Galloway, Wilson W. Performance standards for .009 corrugated paper. Paper Trade J. 90, no. 22:58-59 (May 29, 1930); Paper Ind. 12, no. 3:486-487 (June, 1930); Paper Mill 53, no. 19:2, 6 (May 10, 1930); T. S. 91:255.

How papier mache is made. Paper Ind. 12, no. 8:1416 (Nov., 1930).

Hoyer, Fritz. Copper printing paper. Wochbl. Papierfabr. 60, no. 35:1074-1076 (Aug. 31, 1930); Papier 33, no. 5:533-535 (May, 1930).

Landsberger, H. What is sealing paper? Papier-Ztg. 55, no. 102:2806 (Dec. 20, 1930).

McClure, F. A. Some Chinese papers made on the ancient wove type of screen. Lingnan Sci. J. 9:115-129 (June, 1930).

Manufacture of high pressure paper. Wochbl. Papierfabr. 61, no. 3:73-75 (Jan. 18, 1930).

Metallized paper. Wochbl. Papierfabr. 61, no. 10:322 (Mar. 8, 1930).

Meyer, J. B. The marbling of paper for printing. Papierfabr. 28, no. 37:581-584 (Sept. 14, 1930).

Meyer, J. B. Preparation of leather substitutes from paper. Kunststoffe 1930:49-52.

Miracle of mulch paper. Pulp Paper Mag. Can. 30, no. 5:129-130 (July 31, 1930).

Mittendorf, E. M. Temperature control on paraffin paper machines. Heating-Piping 2:402-403 (May, 1930).

Müller, G. P. Offset papers which are not dusty. Zellstoff u. Papier 10, no. 4:245-246 (Apr., 1930).

Paper bottles. Paper Container 22, no. 3:89-91 (Mar., 1930).

Paper drinking cups. Paper Container 22, no. 4:125-127 (Apr., 1930).

Paper towels. Loss of absorbency. World's Paper Trade Rev. 93, no. 22:2024 (May 30, 1930); Papier-Ztg. 55, no. 59:1724 (July 23, 1930).

Papier mache. Formulas and various procedures. Papeterie 52, no. 9:526, 529 (May 10, 1930).

Papier mache. Its rise and fall. Paper Making 49, no. 5:167 (May, 1930).

Poschl, Viktor. Pressspahn. Papier-Ztg. 55, no. 71:2066; no. 72:2090; no. 73:2111-2112 (Sept. 3, 6, 10, 1930).

Postl, H. Cartridge board. Wochbl. Papierfabr. 61, no. 22: 703-704 (May 31, 1930).

Problems in wall paper manufacture. Papier-Ztg. 55, no. 39: 1192, 1194; no. 48:1430, 1432; no. 53:1568 (May 14, June 14, July 2, 1930).

Rossman, Joseph. Decorated paper. Paper Trade J. 90, no. 18: 64-69 (May 1, 1930). 81 patents.

Rust-protecting paper. Zellstoff u. Papier 10, no. 9:648-649 (Sept., 1930).

Salmony, A. Metallized paper (Schoop metal spraying process). Papier-Ztg. 55, no. 15:424 (Feb. 19, 1930).

Schoop, M. U. Metal-coating combustible substances. Chem. Fabrik 1929:537; C. A. 24:1063.

Sembritzki, —. Machine made bank note paper. Zellstoff u. Papier 10, no. 11:778 (Nov., 1930); World's Paper Trade Rev 94, no. 23:2028 (Dec. 5, 1930).

Standen, R. H. F. Fertilized mulch paper. World's Paper Trade Rev. 94, no. 17:1462, 1464 (Oct. 24, 1930); Papier 33, no. 11: 1183-1184 (Nov., 1930).

Stone, H. A. Glassine and wax paper. Food Industires 2:14-16 (Jan., 1930).

Togo, —. New paper machine for tin papers and cellulose wadding. Wochbl. Papierfabr. 61, no. 25:803-805 (June 21, 1930).

See also Blotting paper, Boards, Carbon paper, Cellophane, Coated papers, Handmade papers, Insulation papers, Kraft paper, Parchment paper, Waterproofing.

Standardization

Fay, R. C. Standardization of paper. Box Makers' J. 54, no. 3:14-16 (1930).

Fay, R. C. Standardization of paper means large annual saving. Dun's Int. Rev. 55:40-42 (July, 1930).

Lugrin, Jean-Philippe. Standardization of the sizes of paper. Papier 32, no. 12:1291-1292, 1295-1296, 1299-1301 (Dec., 1929).

Schulze, Hans. Paper standards. Wochbl. Papierfabr. 61, no. 46:1453-1456; no. 47:1492-1495 (Nov. 15, 22, 1930).

Wehmhoff, B. L. Paper specifications. Paper Mill 53, no. 26:2, 10 (June 28, 1930); C. A. 24:4629, 5484.

Starch

Crown, H. A. Starch in paper making. Paper Mill 53, no. 20:14, 16 (May 17, 1930); C. A. 24:5483.

Govier, Geoffrey E. Starch in paper making. Its use in the American industry. Paper Maker 79, no. 4:373B-373C; no. 5: 509-510; no. 6:623; 80, no. 1:55-56 (Apr.-July, 1930); Annual no., 1930:85-90; C. A. 24:5484.

Strasser, J. P. Starch in papermaking. Paper Ind. 11, no. 12:2205, 2207, 2209 (Mar., 1930); Paper Mill 53, no. 4:5, 19-21 (Jan. 25, 1930); C. A. 24:1506; T. S. 91:215.

Statistics

Ainscough, T. M. Paper trade of Indian. World's Paper Trade Rev. 94, no. 18:1577-1578 (Oct. 31, 1930).

American paper industry. Papier 33, no. 10:1045-1046, 1049-1050, 1053-1054, 1057-1059 (Oct., 1930).

Blackall, A. C. Growth of the pulp industry in Sweden. Cellulose 1, no. 8:204-206 (Sept., 1930).

Booth, J. R. Canada's progress in South African trade. Pulp Paper Mag. Can. 30, no. 11:299-300 (Sept. 11, 1930).

British paper in overseas markets. World's Paper Trade Rev. 93, no. 16:1468, 1470, 1472 (Apr. 18, 1930).

Cadman, A. E. Development of the pulp and paper industry, 1919-1929. Pulp Paper Mag. Can. 29, no. 6:201-203 (Feb. 6, 1930); Papier 33, no. 2:131-132, 135-137 (Feb., 1930).

Canadian pulp and paper, 1929. World's Paper Trade Rev. 94, no. 18:1566, 1568 (Oct. 31, 1930). Paper Making 49, no. 11:388-390; no. 12:388-390 (Nov., Dec., 1930).

Coats, R. H., and Lewis, R. G. Pulp and paper second to none. Canadian statistics. Pulp Paper Mag. Can. 30, no. 15:409-412, 434 (Oct. 9, 1930).

Drechsel, —. The Spanish paper industry. Papierfabr. 28, no. 6:83-87 (Feb. 9, 1930).

Finnish pulp and paper. Conditions during 1929. World's Paper Trade Rev. 93, no. 7:612-614 (Feb. 14, 1930).

Hirschfeld, G. The Austrian paper industry. Pulp Paper Mag. Can. 30, no. 29:561, 580 (Nov. 13, 1930).

Imports and exports for the first half year, 1930. Wochbl. Papierfabr. 61, no. 35:1127-1128 (Aug. 30, 1930).

Japanese paper industry. Paper Making 49, no. 5:163-165 (May, 1930).

Jugo-Slav paper industry. World's Paper Trade Rev. 93, no. 15:1356 (Apr. 11, 1930).

Langley, James A. The wood pulp industry in Japan. Paper-Maker 79, no. 3:290-291 (Mar. 1, 1930).

Mirus, —. Paper statistics for Germany for 1928-1929. Wochbl. Papierfabr. 61, no. 41:1308-1309 (Oct. 11, 1930).

Mirus, —. Position of Germany in the paper industry of the world. Wochbl. Papierfabr. 61, no. 25A:71-72 (June 21, 1930).

Newsprint production, 1913-1929. United States and Canada. Chart. Paper Mill 53, no. 7:2 (Feb. 15, 1930).

Newsprint situation in Canada. Economist 110:1155-1156 (May 24, 1930).

Paper and paper board manufacture for 1928. Paper Trade J. 90, no. 19:38, 40 (May 8, 1930).

Paper and pulp in Canada. Paper Mill 53, no. 5:10, 12, 32 (Feb. 1, 1930).

Paper and pulp industry of Japan. Papierfabr. 28, no. 48: 1062-1064 (Nov. 30, 1930).

Paper foreign trade of Great Britain in 1929. Papierfabr. 28, no. 8:164 (Feb. 23, 1930).

Paper industry of Poland. Papier 33, no. 1:29-30 (Jan., 1930).

Paper production abroad. Paper Mill 53, no. 14:22-23 (Apr. 5, 1930).

Paper production of the world. Papierfabr. 28, no. 34:755 (Aug. 24, 1930).

Paper trade statistics. Various countries of the world for first nine months of 1929. World's Paper Trade Rev. 93, no. 14:1254, 1259, 1261 (Apr. 4, 1930).

Paper using industries in Canada. 1926-1927. Canada, Dominion Bureau of Statistics, Forest Products Branch. 1930. 109 p.

Peters, Heinrich. Expansion of Russian wood exports. Papierfabr. 28, no. 2:34 (Jan. 12, 1930).

Plum, Gustav. Paper and pulp industry during the year 1928-1929. Papier-Ztg. 55, no. 29:889-890, 892, 894 (Apr. 9, 1930).

Position of the United States in the paper industry. Papier 33, no. 5:469-470 (May, 1930).

Pulp and paper of Canada. British Trade Commissioner's report. World's Paper Trade Rev. 94, no. 5:394, 396, 398 (Aug. 1, 1930).

Pulp and paper statistics. Pacific Pulp Paper Ind. 4, no. 4:80-88, 90, 92-94 (Mar. 31, 1930).

Pulpwood consumption and wood pulp production, 1928. Paper Trade J. 90, no. 8:95-98 (Feb. 20, 1930); Paper Mill 53, no. 4:10, 12 (Jan. 25, 1930).

Russian paper industry. World's Paper Trade Rev. 93, no. 24:2181-2182 (June 13, 1930).

Some notes on Canada's pulp and paper industry. Pulp Paper Mag. Can. 29, no. 13:441-442 (Mar. 27, 1930).

South African paper imports. World's Paper Trade Rev. 94, no. 8:700, 702 (Aug. 22, 1930).

Strohmayer, H. C. German paper exports in 1929. Papierfabr. 28, no. 24:511-514; no. 25:542-543 (June 15, 22, 1930).

Wood pulp imports and exports of Great Britain, Newfoundland, Canada, United States, Sweden, Norway, Finland, Czecho-Slovakia and Germany, 1922-1929. Paper Maker 79, no. 1:64A-64F; no. 2:176A-176H; no. 3:270A-270C; no. 4:406-407; no. 5:519-250 (Jan.-May, 1930); Annual no., 1930:49-50, 52-53, 55-56.

World's paper production.. World's Paper Trade Rev. 93, no. 26:2361-2362 (June 27, 1930).

Straw

Booth, L. M. High yield in straw paper making. Paper Trade J. 90, no. 11:51-52 (Mar. 13, 1930); Paper Ind. 11, no. 12:2167-2168 (Mar., 1930); Paper Mill 53, no. 9:5-6 (Mar. 1, 1930); Tech. Assocn. Papers 13:209-210 (May, 1930); Papier-Ztg. 55, no. 32:1003 (Apr. 23, 1930); Zellstoff u. Papier 10, no. 7:492 (July, 1930); C. A. 24:1978; T. S. 91:184.

Deshpande, D. D. Power alcohol and paper from rice straw. J. Indian Inst. Sci. 13A:93-109 (1930); C. A. 24:4890.

Gibson, Albert G. Insulating board from straw. Ind. Eng. Chem. 22, no. 3:223-226 (Mar., 1930); C. A. 24.1978; T. S. 91:245. 25 references.

Heim de Balsac, F., Heim de Balsac, H., and Deforge, A. A

wild-growing rice straw as paper making material. Chimie et industrie 21, no. 2:578-580 (Feb., 1930).

Lund, Marquard H. Straw pulp by the Rinman method. Paper Trade J. 90, no. 3:47-48 (Jan. 16, 1930); C. A. 24:1503; T. S. 91:184.

Method of making straw paper. Fibre Containers 15, no. 3:26-27 (Mar., 1930).

Orlow, M., Osmulskii, —, and Resch, —. Paper from straw. Bum. Prom. 8, no. 8-9:34 (1929); Zellstoff u Papier 10, no. 5:328-329 (May, 1930); Papierfabr. 28:473 (1930).

Routala, O., and **Soini, H.** Straw. III. Action of enzymes on the hemicelluloses. Acta Chem. Fennica 2:135-146 (1930); C. A. 24:5152.

Sembritzki, Walter. History of straw pulp manufacture. Papierfabr. 28, no. 12:207 (Mar. 23, 1930).

Suida, H., Sadler, H., and Noss, F. Decomposition of maize straw by nitric acid. Papierfabr. 28, no. 21:345-346 (May 25, 1930); B. C. A. 1930B:654; C. A. 24:4389.

Sulphate Process

See Alkaline Processes.

Sulphite Process

Awall, Alfred. The Morterud circulation system for sulphite pulping. Svensk Pappers-Tid. 33:196-199 (1930); C. A. 24:3360.

Bergstroem, Karl. Manufacture of pulp from resinous wood by the sulphite process. Papier 33, no. 9:935-936, 939-940, 943-944 (Sept., 1930).

Beveridge, James. An early bisulphite cooking process. Paper Ind. 11, no. 10:1759-1760 (Jan., 1930). C. A. 24:1502.

Bray, Mark W., and Eastwood, Paul R. The neutral sulphite pulping process. 11. Effect on yield, chemical properties and color of pulp produced by changing the ratio of sodium sulphite to sodium bicarbonate in the cooking liquor. Paper Trade J. 90, no. 24:57-60 (June 19, 1930); Tech. Assocn. Papers 13:225-228 (May, 1930); C. A. 24:5487.

Campbell, W. Boyd, and Maass, Otto. Equilibria in sulphur dioxide solutions. Can. J. Research 2:42-64 (1930); Pulp Paper Mag. Can. 29, no. 18:599-602, 616; no. 19:635-638; no. 20:665-666, 684; no. 21:699-702 (May 1-22, 1930); C. A. 24:1566; T. S. 91:206.

Campbell, William George, and Booth, James. Studies on the roasting of different sulphur pyrites for sulphite liquor preparation. Tech. Chem. Papier Zellstoff Fabr. 27, no. 4:49-55 (May 3, 1930).

Cooper, Charles M. Sulphur burning in sulphite acid manufacture. Paper Trade J. 90, no. 12:67-68 (Mar. 20, 1930); Paper Mill 53, no. 13:20-21 (Mar. 29, 1930); Tech. Assocn. Papers 13:208-209 (May, 1930); C. A. 24:3645; T. S. 91:205.

Curran, C. E., Monsson, W. H., and **Chidester, G. H.** The semi-sulphite process. II. Experiments in duplicating commercial news and wrapping papers. Paper Trade J. 90, no. 14:65-68 (Apr. 3, 1930); Tech. Assocn. Papers 13:250-253 (May, 1930); C. A. 24:3361.

Ecke, A. Uneven distribution of acid within a boiling sulphite digester. Papierfabr. 28, no. 18:297-303 (May 4, 1930); B. C. A. 1930B:608; C. A. 24:4390.

Ekenstam, Alf Av. Behavior of pine wood on warming with bisulphite solution. Svensk Pappers-Tid. 33:439 (1930).

Ekenstam, Alf Av. The problem of the bisulphite production of pulp from fir wood. Svensk Pappers-Tid. 33:99-105, 139-141 (1930); C. A. 24:3644.

Fotiev, S., and Moisev, B. Pressure and temperature in containers for sulphite liquors. Zellstoff u. Papier 10, no. 10:716 (Oct., 1930).

Freeman, Horace. The utilization of pyrites in pulp and acid manufacture. Can. Mining Met. Bull. No. 216:471-476 (Apr., 1930); C. A. 24:2840.

Freitag, —. Sulphite liquor. Chem. Tech. Rundschau 45:448-449 (1930); C. A. 24:4389.

Fritsch, Josef. Ritter-Kellner or Mitscherlich? Wochbl. Papierfabr. 61, no. 36:1160 (Sept. 6, 1930).

Groud, Ch. Lime in paper making. Papeterie 52, no. 20:1246, 1249 (Oct. 25, 1930).

Hägglund, Erik. Influence of the sulphite content of the digesting liquor upon the course of the digestion and the properties of the pulp. Papier 33, no. 2:179-184 (Feb., 1930); C. A. 24:4152; T. S. 91:146.

Hägglund, Erik, Johnson, Torsten, and Trygg, Lars H. Chemistry of the sulphite pulping process. XX. The carbonyl groups in lignin and lignosulphonic acid, their properties and their importance in the sulphite pulping process. Svensk Pappers-Tid. 32:815-823 (1929); C. A. 24:3644; Cellulosechemie 11, no. 2:30-38 (Feb. 9, 1930).

Hanson, John O. Problems in sulphite. Paper Mill 53, no. 41:22-23 (Oct. 11, 1930); C. A. 24, 6008.

Hasche, R. Leonard. Manufacture of liquid sulphur dioxide and its use in the pulp and paper industry. Paper Trade J. 90, no. 26:49-51 (June 26, 1930); Pacific Pulp Paper Ind. 4, no. 5:33-34, 46-47 (Apr., 1930); C. A. 24:5492.

Healy, J. J., Jr. Some experiences with Cottrell precipitators in the purification of burner gases. Trans. Am. Inst. Chem. Eng. 14:37-41 (1930); Chem. Met. Eng. 37, no. 6:366-368 (June, 1930).

Holtan, E. Developments in the sulphite industry in the past two years. Papir-J. 18, no. 10:117-121 (June 14, 1930); C. A. 24:4930; T. S. 91:145.

Humm, W. Control of the acid towers in the manufacture of sulphite pulp. Wochbl. Papierfabr. 60, no. 52:1641-1643 (Dec. 28, 1929); T. S. 91:145.

Kirmreuther, H. Preparation of sulphite liquor. Papierfabr. 28, no. 28:449-451 (July 13, 1930); Zellstoff u. Papier 10, no. 8:565-567 (Aug., 1930); Wochbl. Papierfabr. 61, no. 26:834-838 (June 28, 1930); C. A. 24:5492.

Klein, Arthur St. Impregnation of wood and circulation in the sulphite process. Papierfabr. 28, no. 28:451-453 (July 13, 1930); Wochbl. Papierfabr. 61, no. 32:1039-1042 (Aug. 9, 1930); C. A. 24:5492.

Klein, Arthur St. Impregnation of wood during the digestion in the pulping process. Papierfabr. 28, Fest- u. Auslandheft, 105-111 (June, 1930); B. C. A. 1930B:857.

Klein, Arthur St. Improvements in the cooking of wood pulps. Direct and indirect heating and forced circulation in foreign pulp mills. Zellstoff u. Papier 10, no. 7:481-488 (July, 1930); Paper Ind. 12, no. 4:679-682 (July, 1930); Pulp Paper Mag. Can. 30, no. 7: 185-186, 200 (Aug. 14, 1930); C. A. 24:5488; T. S. 91:267.

Klein, Arthur St. Uneven distribution of acid in a cooking sulphite digester. Papierfabr. 28, no. 24:393 (June 15, 1930).

Kullgren, Carl. The action of neutral salts and dilute acids on sulphite pulp. Svensk Kem. Tid. 42, no. 8:179-193 (1930); C. A. 24:6010; B. C. A. 1930B:984.

Lathe, F. E. Canadian magnesite—an industry regenerated by research. Chem. Trade J. 86:156-157 (1930); C. A. 24:2551.

Lauber, Hugo. The formation of gypsum in the acid towers of sulphite pulp mills. Papierfabr. 28, Fest- u. Auslandheft, 50-53 (June, 1930); C. A. 24:4629.

Lamassiande, —. Manufacture of cellulose by the bisulphite process, in part from resinous wood and its use in the preparation of artificial silk, cellulose acetate and nitro-cellulose. Papeterie 52, no. 23:1449-1450, 1453 (Dec. 10, 1930).

Leino, E. M. Mechanical control of digestion in sulphite cellulose plants. Svensk Pappers-Tid. 33, no. 12:487-489 (June 30, 1930); C. A. 24:6008; Zellstoff u. Papier 10, no. 11:776-777 (Nov., 1930).

Lime in paper making. Paper Maker, Annual no., 1930:70, 72.

Merrill, A. D. The chemipulp process. Paper Trade J. 90, no. 23:81-82 (June 5, 1930); Pulp Paper Mag. Can. 29, no. 26:861-864 (June 26, 1930); Paper Mill 53, no. 22:26, 52 (May 31, 1930);

Papier 33, no. 10:1005-1006, 1009 (Oct. 30, 1930); C. A. 24:4152; T. S. 91:104.

Mitchell, F. L. Circulating system for sulphite digesters. Pulp Paper Mag. Can. 29, no. 11:391-394; no 12:421-424 (Mar. 13, 20, 1930); Papier 33, no. 5:511-516; no. 6:641-642, 645-646 (May, June, 1930); C. A. 24: 3361.

Monsson, W. H., and Chidester, C. H. Pulping Eastern hemlock by the sulphite process. II. The effect of different types of temperature curves. Paper Trade J. 91, no. 16:50-53 (Oct. 16, 1930).

Morterud, E. Sulphite digestion method. Papir-J. 17:181 (1929); Papierfabr. 28:31 (1930); Boll staz. sper. carta 9, no. 5:63-64 (May, 1930).

Müller, Fr., and Walter, Paul. Critical investigation of development of the technical manufacture of sulphite pulp on the basis of recent literature. Wochbl. Papierfabr. 60, no. 23A:73-81; no. 29:885-889; no. 33:1016-1021; no. 39:1203-1206; no. 49: 1529-1534 (1929); 61, no. 4:109-112; no. 13:412-416; no. 21:669-672 (Jan. 25, Mar. 29, May 24, 1930); T. S. 91:145, 267. 216 footnotes.

Nakashima, T., Ohora, S., and Murakami, J. Behavior of cellulose with bisulphite as compared with sulphurous acid solution. I. Experiments at 110°. J. Soc. Chem. Ind. (Japan) 33:199-200B (1930); B. C. A. 1930B:857; C. A. 24:4929.

Ohlson, John F. Scandinavian sulphite manufacture. Paper Trade J. 90, no. 6:71-73 (Feb. 6, 1930); Papier 33, no. 2:169-170, 173-174, 177 (Feb. 1930); C. A. 24:1975; T. S. 91:205.

Perlstein, J., and **Rosanov, S.** Pyrites burning at Kamenskaja paper mill. Bum. Prom. 1929, no. 2-3:57-65; Zellstoff u. Papier 10. no. 4:253 (Apr., 1930).

Promising results from research in burning pyrites. Pulp Paper Mag. Can. 30, no. 25:692-693 (Dec. 18, 1930).

Schwalbe, C. G. Sulphite cellulose manufacture and its effluents. Chem.-Ztg. 54, no. 1:4-5; no. 2:21-22 (Jan. 1, 4, 1930); C. A. 24: 1975; T. S. 91:104.

Schwalbe, Carl G., and Hagström, N. F. Preparation of pulp from spruce by the calcium bisulphite process. Cellulosechemie 11, no. 12:233-249 (Nov. 30, 1930).

Several problems of the German sulphite industry. Papierfabr. 28, no. 48:778-780 (Nov. 30, 1930).

Sisler, C. O. A new type of continuous sulphur dioxide recorder. Pulp Paper Mag. Can. 29, no. 24:791-792, 810 (June 12, 1930); C. A. 24:5184.

Smärt, Berthold. Circulation of liquor in sulphite digestion. Svensk Pappers-Tid. 33:235 (1930); C. A. 24:3361.

Sulphite process. New and old contributions. Zellstoff u. Papier 10, no. 6:393-394 (June, 1930).

Togo, —. Halfstuff by the sulphite process. Wochbl. Papierfabr. 61, no. 21:674-676 (May 24, 1930).

Sulphite Waste Liquors

Apparatus for concentrating waste sulphite liquor. Chem. Ztg. 54:99 (1930); C. A. 24:3645

Casaburi, Vittorio. Improvement and progress in rapid tanning. Use of sulphite cellulose in the tanning of leather. La Cuir Tech. 19:109-111, 129-145 (1929); J. Am. Leather Chem. Assocn. 25:304-306 (1930).

Hägglund, Erik. The production of bakers' yeast from sulphite waste liquors. Papierfabr. 28, no. 5:65-68 (Feb. 2, 1930); C. A. 24:3365; T. S. 91:153.

Hausen, J. Advances in the combustion of sulphite waste liquors. Papierfabr. 28, no. 40:632-634 (Oct. 5, 1930.)

Hausen, J. Combustion of sulphite waste liquor in the boiler furnace. Die Wärme 53:633-638 (1930); C. A. 24:5491.

Howard, Guy C. Progress report on sulphite waste liquors. Ind. Eng. Chem. 22, no. 11:1184-1185 (Nov., 1930); Pulp Paper Mag. Can. 30, no. 24:665-666 (Dec. 11, 1930).

King, R. M. Lignin extract as a bonding agent for ceramic bodies. Ceramic Industry 14:62-64 (1930); C. A. 24:2850.

Krause, Hugo. Sugars in sulphite waste liquors. Tech. Chem. Papier Zellstoff Fabr. 27, no. 12:192-193 (Dec. 21, 1929); T. S. 91:146.

Kuhles, W. Utilization of sulphite wastes in pulverized coal firing. Power 72:468-469 (Sept. 16, 1930).

Kuhles, W. To destroy or utilize sulphite waste liquors. Papierfabr. 28, no. 38:604-607 (Sept. 21, 1930); C. A. 24:6008.

Lund, Marquard H. Sulphite liquor byproducts. Paper Mill 53, no. 35:22-23 (Aug. 30, 1930).

Miller, R. H. Concentrating waste sulphite liquor. Can. Chem. Met. 14:19-21 (1930); C. A. 24:1502; T. S. 91:206.

Pritzkov, —. The waste liquor problem in the pulp and paper industry. Papierfabr. 28, no. 23:382-384 (June 8, 1930).

Pyhala, Evald. Can the utilization of ligneous substances from sulphite waste liquor be regarded as practically possible. Svensk Pappers-Tid. 32:702-703 (1930); C. A. 24:3365.

Routala, Oskari, Sevon, J., and Weckmab, Sven. Alkali cooking liquors from waste sulphite liquor. Beret. 18th Skand. Naturforskermöde, Copenhagen, 1929:471-475; C. A. 24:3111; T. S. 91:146.

Routala, Oskari, and Weckman, Sven. Use of sulphite waste liquor in the preparation of sulphate pulp. Acta Chem. Fennica 2:147-153 (1929); Cellulosechemie 11:85 (1930); C. A. 24:5151.

Schichirev, —. Pollution of a river with sulphite liquor. Bum. Prom. 8, no. 8-9:62 (1929); Papierfabr. 28:473 (1930).

Schmid, W. Domestic and foreign patents on the utilization of waste liquors and gases in the paper industry (1925-1930). Papierfabr. 28, no. 36:573-575. no. 37:587-590; no. 39:620-623; no. 40:636-639; no. 42:671-672; no. 45:717-719; no. 46:744-746; no. 47:744-746; no. 51/52: 875-877 (1930).

Technical Control

Brecht, Walter. Technical control in the modern pulp mill. Wochbl. Papierfabr. 61, no. 2:43-49 (Jan. 11, 1930); Zellstoft u. Papier 11, no. 1:27-31 (Jan., 1930).

Brecht, Walter. Current progress in technical control in pulp and paper mills. Papierfabr. 28, no. 10:149-153. no. 11:178-182 (Mar. 9, 16, 1930); Zellstoff u. Papier 10, no. 3:175-178 (Mar., 1930).

Brown, W. G. Relationship between the technical man and the mill superintendent. Pacific Pulp Paper Ind. 4, no. 5:31-32 (Apr., 1930).

Coll, Thomas Costa. Observation and control in the manufacture of paper. Chimie et industrie, Special No., Mar., 1930:452-457; C. A. 24:6011.

Conway, J. M. Management and plant operation. Paper Mill 53, no. 42:2, 10, 12 (Oct. 18, 1930).

Fair, A. E. H. Control in the specialty mill. Paper Ind. 12, no. 3:476-477 (June, 1930); C. A. 24:5483.

French, George. Howard Smith technical department. Pulp Paper Mag. Can. 29, no. 11:385-386 (Mar. 13, 1930).

Libby, C. E. The chemist as an economic factor in paper making. Paper Ind. 12, no. 2:298-298b (May, 1930); Paper Mill 53, no. 20:5, 18, 20-21 (May 17, 1930).

Newhall, Charles A. Technical control. What's in it for the chemist. Pacific Pulp Paper Ind. 4, no. 2:36-37, 47 (Feb., 1930).

Reynolds, L. C. The foundation for operation of modern management methods. Pulp Paper Mag. Can. 30, no. 16:441-442, 452 (Oct. 16, 1930); Paper Trade J. 91, no. 11: 63-65 (Sept. 11, 1930); Paper Mill 53, no. 36:10, 12, 24 (Sept. 6, 1930).

Shuman, J. Technical control in a paper board mill. Paper Maker, Intern. No., 1930:83-84; C. A. 24:5494.

Strobach, C. Duty of the control department and its means of control. Wochbl. Papierfabr. 60, no. 23A:33-40; no. 32: 986-990; no. 37:1135-1139; no. 44:1361-1366. no. 51:1602-1606 (June 8, Aug. 10, Sept. 14, Nov. 2, Dec. 21, 1929); 61, no. 16:516-520; no. 19:599-601. no. 40:1281-1287 (Apr. 19, May 10, Oct. 4, 1930).

Trade

Benson, H. K. Production of pulp in the Pacific Northwest. Ind. Eng. Chem. 22, no. 8:818-822 (Aug., 1930); C. A. 24:6010.

Booth, John R. British paper industry and trade in 1929. Pulp Paper Mag. Can. 29, no. 8:293-294 (Feb. 20, 1930).

British paper industry in 1929. World's Paper Trade Rev. 93, no. 1:1-2, 4 (Jan. 3, 1930).

Brock, G. W. Ontario paper industry had satisfactory year. Paper Trade J. 90, no. 8:94 (Feb. 20, 1930).

Case, Lynn B. Manufacture and uses of paper goods in America. World's Paper Trade Rev. 93, no. 6:452, 454, 456, 458 (Feb. 7, 1930); T. S. 91:247.

Clemm, Otto. Position of the pulp industry in German trade. Wochbl. Papierfabr. 61, no. 26:826-830 (June 28, 1930).

Conway, J. M. The tissue situation. Paper Mill 53, no. 52: 22-23 (Dec. 27, 1930).

Cornell, John. The outlook for 1931. Paper Mill 53, no. 52:3, 32 (Dec. 27, 1930).

Cornell, John. Forecast for 1930. Paper Mill 53, no 2:2, 24 (Jan. 11, 1930).

Cornell, John. Trend in paper demand. Paper Mill 53, no. 50:2 (Dec. 13, 1930).

Donaldson, E. Victor. Box board situation. Paper Mill 53, no. 50:6 (Dec. 13, 1930).

Ellerson, H. W. Kraft paper situation. Paper Mill 53, no. 48: 12, 24, 26 (Nov. 29, 1930).

European paper cartels. Paper Mill 53, no. 27:20-22 (July 5, 1930).

European paper industry. World's Paper Trade Rev. 93, no. 19:1708, 1710 (May 9, 1930).

Everest, D. C. Regional shift in production. Paper Trade J. 90, no. 11:34, 36, 38 (Mar. 13, 1930); Paper Ind. 12, no. 1:92-94 (Apr., 1930); Paper Mill 53, no. 10:2, 22-23 (Mar. 8, 1930).

Finish pulp and paper industry. World's Paper Trade Rev. 93, no. 9:800 (Feb. 28, 1930).

Frost, B. M. Paper trade and industry of Japan. U. S. Dept. Commerce, Trade Information Bull, 672. (1930). 25 p.

Gallop, Hubert B. Market for paper in China. Pacific Pulp Paper Ind. 4, no. 11:35-36 (Oct., 1930).

Gardner, Guy A. Heavy demand for paper making chemicals in 1929. Paper Trade J. 90, no. 8:79 (Feb. 20, 1930).

Gracey, Wilbur T. Brazil. Paper Ind. 12, no. 4:684-687 (July, 1930).

Gracey, Wilbur T. Exporting to Argentina. Paper Ind. 12, no. 3:473-475 (June, 1930).

Gracey, Wilbur T. The paper trade of Cuba. Paper Ind. 12, no. 8:1384-1388 (Nov., 1930).

Gracey, Wilbur T. The paper trade of Uruguay. Paper Ind. 12, no. 5:835-838 (Aug., 1930).

Gracey, Wilbur T. The paper trade of Venezuela. Paper Ind. 12, no. 6:1019-1022 (Sept., 1930).

Grayson, King H. The international situation in paper. Paper Ind. 11, no. 12:2143-2145 (Mar., 1930).

Grayson, King H., and Rosser, W. M. The international situation in paper. Paper Ind. 12, no. 2:278-281 (May, 1930).

Heckford, F. J. T. Some aspects of industry, 1880-1930. Paper Maker, Annual no., 1930:7-8 (1930).

Hicks, Walter R. Paper stock demand was unsatisfactory in 1929. Paper Trade J. 90, no. 8:88-89 (Feb. 20, 1930).

Hirschfeld, G. Scandinavia's paper industry. Pulp Paper Mag. Can. 30, no. 5:127-128 (July 31, 1930).

Hirschfeld, G. The German paper industry. Pulp Paper Mag. Can. 30, no. 11:297-298 (Sept. 11, 1930).

Italian paper industry. World's Paper Trade Rev. 93, no. 26:2364-2366 (June 27, 1930).

Kellogg, R. S. Year of new records in the newsprint industry. Paper Trade J. 90, no. 8:75-76 (Feb. 20, 1930).

Laughton, H. J. Paper industry experiences irregular year. Paper Trade J. 90, no. 8:69-73 (Feb. 20, 1930).

Mijakojima, —. Japanese papers. Papeterie 52, no. 21:1310, 1313 (Nov. 10, 1930).

Market for paper in Europe. Paper Mill 53, no. 46:20-22 (Nov. 15, 1930).

Markets for paper outside the empire. Paper Maker, Intern. No., 1930:8-10.

Marshall, Granville. Paper in South Africa. World's Paper Trade Rev. 94, no. 21:1812, 1814, 1816 (Nov. 21, 1930).

Merchant, E. O. The outlook for 1930. Paper Mill 53, no. 8:38, 40, 42, 48 (Feb. 22, 1930).

Merchant, E. O. Outlook for business and the paper industry. Paper Trade J. 90, no. 8:267-268 (Feb. 20, 1930).

Naylor, E. H. Fine paper industry has fairly prosperous year. Paper Trade J. 90, no. 8:80-81 (Feb. 20, 1930).

Newsprint investigation report. Paper Mill 53, no. 27:1-2 (July 5, 1930).

Newsprint position in 1930. World's Paper Trade Rev. 93, no. 2:102, 104 (Jan. 10, 1930).

Newsprint shows signs of convalescence. Pacific Pulp Paper Ind. 4, no. 13:46-47 (Dec., 1930).

Outlook is bright. An analysis of world statistics and trends designed to answer the question: What's ahead for the Pacific Coast? Pacific Pulp Paper Ind. 4, no. 12:25-29 (Nov., 1930).

Paper cartels and price conventions in Europe. Pulp Paper Mag. Can. 29, no. 22:721-722 (May 29, 1930); World's Paper Trade Rev. 94, no. 3:226, 228, 230 (July 18, 1930).

Paper industry in Nova Scotia. Paper Trade J. 90, no. 19:70 (May 8, 1930).

Paper trade progress during 1929. Paper Maker 79, no. 1:2-3, 13 (Jan. 1, 1930).

Porter, O. M. Improvements in the paper industry. Paper Trade J. 91, no. 15:34 (Oct. 9, 1930).

Porter, Oliver M. Price war costing kraft industry twenty million dollars a year. Pulp Paper Mag. Can. 30, no. 26:709-710 (Dec. 25, 1930).

Reviewing the Pacific Coast. Pacific Pulp Paper Ind. 4, no. 4:47-53 (Mar. 31, 1930).

Ruby, A. Situation and tendencies in the paper industry of the the United States. Papier 33, no. 11:1145-1146, 1149-1150, 1153-1154, 1157-1158, 1161 (Nov., 1930).

Sibley, C. L. News print industry expands further in Canada. Paper Trade J. 90, no. 8:90-93 (Feb. 20, 1930).

Sundby-Hansen, H. Wood pulp and paper in Norway. Am. Scandinavian Rev. 17:682-684 (Nov., 1929).

Swanson, O. F. Chemical and mechanical pulp markets were steady. Paper Trade J. 90, no. 8:86-87 (Feb, 20, 1930).

Tendencies of European commerce today. Paper Maker, Intern. No., 1930:85-89.

U. S. Bureau of the Census. Census of manufactures: 1927. Converted paper products industries and labels and tags. Washington, Govt. Printing Off., 1930. 25 p.

U. S. Bureau of the Census. Paper and paper board, production and papermaking equipment in use, pulpwood consumption and wood pulp production. Compiled in cooperation with the Forest Service, U. S. Dept. Agr. 1929. 14 p.

Waring, Arthur N. Coarse paper survey for 1929. Trend for 1930. Paper Trade J. 90, no. 8:77-78 (Feb. 20, 1930).

Wheat, George G. Wants U. S. to make more paper. Pulp Paper Mag. Can. 29, no. 1:5-6, 30 (Jan. 2, 1930).

Whiting, Grafton. Container industry. Paper Mill 53, no. 51.2, 26 (Dec. 20, 1930).

Whiting, Grafton. Paper board industry has unprofitable year. Paper Trade J. 90, no. 8:82-85 (Feb. 20, 1930.)

Willson, S. L. The first half of 1930. Paper Mill 53, no 28:1 (July 12, 1930).

Wilson, P. B. Newsprint. Developments in 1929. Paper Mill 53, no. 5:8, 38 (Feb. 1, 1930).

Ventilation

Beavis, E. Norman. Heating methods in paper and board mills. World's Paper Trade Rev. 92, no. 13:1150, 1152, 1154 (Sept. 26, 1930).

Hawley, R. S. Air conditioning a box factory. Heating-Piping 2:760-761 (Sept., 1930).

Makovskii, —. The basis for the calculation of ventilation of paper machine rooms. Bum. Prom. 8, no. 7:13 (1929); Papierfabr, 28:485 (1930).

Newall, M. T. Natural draugh ventilation. World's Paper Trade Rev. 92, no. 26:2310, 2312, 2314, 2316, 2318, 2320, 2322 (Dec. 27, 1929); 93, no. 1:18, 20, 22, 24, 26; discussion, no. 2:130, 132, 135-136, 145-146, 148, 150 (Jan. 1, 8, 1930); Proc. Tech. Sect., Papermakers' Assocn. Gt. Britain Ireland 10, pt. 2:302-319; discussion, 319-328 (Mar., 1930); T. S. 91:248.

Tomlinson, M. Air conditioning paper and textiles; effect on insulating and other properties. Heating-Piping 2:8-11 (Jan., 1930).

Ventilation of paper machine rooms. Papeterie 52, no. 1:13-14 (Jan. 10, 1930).

Vulcanized Fibers

Dunton, A. R., and Muir, A. W. Vulcanized fiber. Electrician 104:458-460 (1930); C. A. 24:3358.

Presser, A. Preparation of vulcanized fiber masses. Kunststoffe 20:34-35 (1930).

Simons, F. L. Vulcanized fiber manufacturing problems. Paper Trade J. 90, no. 25:60-61 (June 19, 1930); Tech. Assocn. Papers 13: 228-229 (May, 1930); C. A. 24:5493; T. S. 91:254.

Simons, F. L. Vulcanized fiber. Cellulose 1, no. 4:105-107; no. 5:130-136 (May, June, 1930); C. A. 24:4155. Contains a bibliography and patent references.

Washing

Fotiev, —. Washing of bleached pulp. Bum. Prom. 8:40 (1929); Papierfabr. 28:31 (1930).

Morrison, H. A. Pulp washing on vacuum filters. Paper Mill 53, no. 8:56, 58 (Feb. 22, 1930); Paper Trade J. 90, no. 9:45-46 (Feb. 27, 1930); Tech. Assocn. Papers 13:121-122 (May, 1930); C. A. 24:1975; T. S. 91:227.

Noble, J. H., and Backus, George S. Washing kraft pulp. Comparison of diffusers and continuous vacuum filters. Pulp Paper Mag. Can. 29, no. 21:691-692, 716 (May 22, 1930); Paper Mill 53, no. 15:20-21, 26 (Apr. 12, 1930); C. A. 24: 4152; Paper Maker 80, no. 3:279-280 (Sept., 1930); T. S. 91:164.

Wastes

Baker, C. M. Steam pollution problems of the Pacific Coast. Pacific Pulp Paper Ind. 4, no. 4:98-100 (Mar. 31, 1930).

Benson, H. K. Measurement of pollution in sea water. Paper Trade J. 90, no. 24:69-71 (June 12, 1930); Tech. Assoc. Papers 13:239-241 (May, 1930); C. A. 24:5402.

Eldridge, E. F. Studies of biochemical oxygen demand of trade wastes. Eng. News-Record 105:12-13 (July, 3, 1930); C. A. 24:5403.

Ellis, E. T. Putting paper mill wastes to work. Paper Maker, Intern. No., 1930:29-30.

Humble, B. Ivar. Continuous breaking and beating of waste paper. Paper Trade J. 91, no. 1:49-51 (July 5, 1930); C. A. 24:5491.

Humble, B. Ivar. Use of waste paper in American paper mills. Svensk Pappers-Tid. 32:858-864 (Dec. 31, 1929); Zellstoff u. Papier 10, no. 6:396-397 (June, 1930); C. A. 24:3367.

The suction cell filter. Saving paper mill waste. Paper Maker, Intern. No. 1930:70, 72.

Warrick, L. F., and Watson, K. M. Pollutional surveys in Wisconsin paper mills. Paper Trade J. 90, no. 24:64-66 (June 12, 1930); Tech. Assocn. Papers 13:242-244 (May, 1930); C. A. 24:5402.

Water

Barry, T. M. Water supply system at Kapuskasing. Can. Engineer 57, no. 26:826-829 (1929).

Berriman, J. M. Water purification. Proc. Tech. Sect., Papermakers' Assocn. Gt. Britain Ireland 10, pt. 2:360-379; discussion, 379-380 (Mar., 1930); World's Paper Trade Rev. 92, no. 18:1548, 1550, 1552, 1554, 1618, 1620; no. 19:1674, 1676, 1685-1686, 1687 (Nov. 1, 8, 1929); Paper Mill 52, no. 46:8, 10, 14, 31; no. 48:14, 16, 24 (Nov. 16, 30, 1939); Paper Maker 78, no. 6:587, 589 (Dec., 1929).

Birkeness, O. T. Use of chlorine for slime elimination. Paper Trade J. 91, no. 20:51-52 (Nov. 13, 1930).

Cooper, N. A. Slime control with chlorine. Paper Trade J. 90, no. 20:59-60 (May 15, 1930); Paper Maker 80, no. 2:155, 157, 161 (Aug., 1930).

Divine, F. E. Coagulation factors in water clarification. Paper Trade J. 91, no. 11:71-72 (Sept. 11, 1930); Pulp Paper Mag. Can. 30, no. 20:563-564, 580 (Nov. 13, 1930).

Fink, G. J. Applications of sodium aluminate in water supply systems of pulp and paper mills. Cellulose 1, no. 2:38-42 (Mar., 1930); C. A. 24:4154.

Merwin, J. K. Traveling water screens. Paper Mill 53, no. 39:14-16 (Sept. 27, 1930).

Pattillo, Donald K. Paper mill slime. Paper Mill 53, no. 51:4, 6, 8, 32 (Dec. 20, 1930).

Patillo, Donald K. The causes, effects and prevention of paper mill slime. Cellulose 1, no. 11:280-284 (Dec., 1930).

Stanger, Albert. Water purification by drum filter. Zellstoff u. Papier 10, no. 2:88-89 (Feb., 1930).

Trautschold, Reginald. Good filtration pays in many ways. Paper Trade J. 90, no. 2:44, 46, 48, 50, 52 (Jan. 9, 1930); C. A. 24, 1507; T. S. 91:244.

Trautschold, Reginald. Water and steam purification; filtration and treatment. Paper Trade J. 90, no. 20:46, 48, 50, 52, 54 (May 15, 1930).

Wegler, R. Technology of mill water. Paper Maker 80, no. 3:226-227 (Sept., 1930); Annual no., 1930:83-84, 92.

Waterproofing

Cadmium compound for impregnation. Wochbl. Papierfabr. 61, no. 6:182-183 (Feb. 8, 1930); T. S. 91:256.

Hodges, A. L. Automatic recording waterproof tester. Phil. Mag. (7) 10:327-328 (1930); B. C. A. 1930B:1022.

Matagrin, A. Waterproofing papers and boards. Papeterie 51, no. 1:2, 5-6, 9-10; no. 2:58, 61; no. 4:178-181; no. 6:294, 297; no. 8:430, 433-434; no. 9:490, 493-494; no. 10:546 549-550. no. 11:606, 609-610, 613; no. 13:741, 745; no. 14:805-806; no. 16:921-922, 925. no. 18:1049-1050, 1053; no. 19: 1117-1118, 1121-1122; no. 20:1169-1170, 1173; no. 22:1297-1298, 1301; no. 23:1373-1374, 1377; no. 24:1433-1444 (1929); 52, no. 3:134, 137-138, 141-142; no. 4:209-210, 213; no. 6:337-338; no. 8:474, 477, 479-480; no. 10:585-586, 589-590; no. 11:654, 657-658, 661; no. 12:717-718, 721; no. 13:790, 793-794; no. 22:1385-1386; no. 24: 1518, 1521 (1930).

Waterproof papers. Paper Makers, Intern. No., 1930:6.

Wax Papers

Manufacture of wax paper. Technical difficulties overcome. Paper Maker, Intern. No., 1930:47.

Mittendorf, E. M. Temperature control on paraffin paper machine. Heating-Piping 2:402-403 (May, 1930).

Rossman, J. The manufacture of waxed paper. Paper Trade J. 90, no. 5:56-65 (Jan. 30, 1930). 135 patents.

Stone, H. A. Glassine and wax paper. Food Industries 2:14-16 (Jan., 1930).

Thomas, Chas. Alen, and Reboulet, Herman J. Moisture-proof determination of waxed papers. Ind. Eng. Chem., Anal. Edition 2, no. 4:390-391 (Oct. 15, 1930); C. A. 24:5487.

Wieger, B. Waxed sized printing papers. World's Paper Trade Rev. 94, no. 20:1790 (Nov. 14, 1930); Zellstoff u. Papier 10, no. 12:874-875 (Dec., 1930).

Zimmel, Josef. Wax and paraffin papers. Wochbl. Papierfabr. 61, no. 35:1129-1131 (Aug. 30, 1930); Papier 33, no. 10:1085-1086, 1089 (Oct., 1930).

White Water

Argy, M. J. Saving white water. World's Paper Trade Rev. 93, no. 25:2260, 2262 (June 20, 1930); Paper Mill 53, no. 18:18, 24 (May 5, 1930); C. A. 24:5494.

Baker, C. M. Developments in white water utilization. Paper Trade J. 90, no. 9:42-43 (Feb. 27, 1930); Paper Mill 53, no. 8:86, 88, 92 (Feb. 22, 1930); Tech. Assocn. Papers 13:118-119 (May, 1930); C. A. 24:1977; T. S. 91:245.

Baker, C. M. The key to white water utilization. Paper Trade J. 90, no. 23:97-99 (June 5, 1930); Paper Mill 53, no. 22:18, 20, 56 (May 31, 1930); Pulp Paper Mag. Can. 30, no. 16:449-451 (Oct. 16, 1930); Paper Maker 80, no. 1:17-19 (July, 1930); T. S. 91:165.

Fotiev, —. Water consumption and fiber loss on the paper machine. Bum. Prom. 8:30 (1929); Papierfabr. 30:12 (1930).

Haupt, —. Waste water problems in the pulp and paper industry. Tech. Chem. Papier Zellstoff Fabr. 27, no. 5:65-70 (May 31, 1930).

Pesch, A. W. Proposed standard method of measuring, sampling and analyzing white and waste waters. Paper Trade J. 90, no. 9:40-42 (Feb. 27, 1930); Paper Mill 53, no. 8:82, 84, 94 (Feb. 22, 1930); Tech. Assocn. Papers 13:116-118 (May, 1930); World's Paper Trade Rev. 93, no. 21:1910, 1912, 1914 (May 23, 1930); C. A. 24:1976; T. S. 91:245.

Pritzkov, —. Waste water questions in pulp and paper industry. Zellstoff u. Papier 10, no. 6:400-402 (June, 1930).

Recovery of fine fibers contained in the bleaching waters. Papier 32, no. 12:1311-1312, 1321-1322 (Dec., 1929).

Taylor, Aubrey T. Cutting out fiber losses. Paper Ind. 11, no. 10:1779-1780 (Jan., 1930); T. S. 91:245.

White water problem (Closed system of the Bird Machine Co.). Paper Mill 53, no. 20:6, 32 (May 17, 1930).

Wires

Beebe, C. Weaving Fourdrinier wires. Wire Products 5, no. 1:14 (Jan., 1930).

Beebe, N. Wire cloth for paper making. Wire 4:297, 317-318 (1929); C. A. 24:3112; T. S. 91:192.

Buchanan, William E. Fourdrinier wires. Paper Mill 53, no. 52:4, 26-27 (Dec. 27, 1930).

Escourrou, R. An apparatus for testing paper machine wires. Papier 32, no. 4:409-413 (Apr., 1929); Paper Trade J. 89, no. 4:59-61 (July 18, 1929); Wire Products 4, no. 11:375-376, 387 (Nov., 1929); C. A. 23:5591.

Low, Joseph H., and Webb, Nelson W. Fourdrinier wires. Paper Mill 53, no. 22:16, 56, 58, 60 (May 31, 1930); Pulp Paper Mag. Can. 30, no. 10:269-270, 273 (Sept. 4, 1930).

Mackay, M. J. Rolled Fourdrinier wires. Paper Mill 53, no. 14:10 (Apr. 5, 1930).

Potter, G. J. C. Pitch troubles. Paper Ind. 12, no. 1:90-91 (Apr., 1930); Pulp Paper Mag. Can. 29, no. 10:363-364, 378 (Mar. 6, 1930); Paper Makers' Mo. J. 68, no. 6:229-232 (June, 1930); C. A. 24:1977; T. S. 91:246.

Strachan, James. Wear of machine wires. Paper Maker 80, no. 5:465-466 (Nov., 1930); Paper Mill 53, no. 48:4 (Nov. 29, 1930).

Wood Room

Balko, George A. Automatic weighing of wood. Pulp Paper Mag. Can. 29, no. 6:183-184 (Feb. 6, 1930); Papier 33, no. 2:165-166 (Feb., 1930); C. A. 24:1974; T. S. 91: 226.

Benjamin, H. E. Laboratory control should extend to the wood room. Pacific Pulp Paper Ind. 4, no. 6:40, 51 (May, 1930),

Business founded on sawmill waste (International Wood and Sulphite Co.). Pacific Pulp Paper Ind. 4, no. 1:25-28 (Jan., 1930).

Flint, H. J. Some trends in the proper screening of wood chips for pulp. Pacific Pulp Paper Ind. 4, no. 1:37-38 (Jan., 1930).

Parker, W. A. Measuring the wood pile. Pulp Paper Mag. Can. 30, no. 14:393-394 (Oct. 2, 1930).

Wood supply--From tree to digester. Pacific Pulp Paper Ind. 4, no. 4:64-68 (Mar. 31, 1930).

Woods

Cirves, Francis J. Study of wood deterioration. Paper Trade J. 90, no. 10:63-66 (Mar. 6, 1930); Tech. Assocn. Papers 13: 183-186 (May, 1930); C. A. 24:2289; T. S. 91:186.

Johnston, H. Wyatt, and Maass, Otto. Penetration studies of the path of liquid penetration in jack pine. Canadian J. Research 3:140-173 (Aug., 1930); C. A. 24:5490.

Lundberg, Gustaf. The density of dry pine and spruce. Svensk Pappers-Tid. 32:703-704 (1929); C. A. 24:4155.

Pidgeon, L. M., and Maass, Otto. The penetration of water vapor into wood. Canadian J. Research 2:318-326 (1930); C. A. 24:4155.

Pidgeon, Lloyd M., and Maass, Otto. Absorption of water by wood. J. Am. Chem. Soc. 52:1053-1068 (1930); C. A. 24:1974.

Scarth, George W. Sinkage studies. IV. The mechanism of the absorption of water by wood blocks. Canadian J. Research 3:107-114 (Aug., 1930).

Wood investigations. Zellstoff u. Papier 10, no. 9:634-637 (Sept., 1930).

Corrosion and Heat Resisting Alloys

The American Society of Testing Materials has recently issued a folder containing tables of chemical compositions, physical and mechanical properties and corrosion resistent properties of corrosion resistent and heat resistent alloys.

The data is assembled in the form of insert tables. The alloys are grouped according to manufacturer, the manufacturers in general being listed alphabetically.

In 1924 the Society made its first effort at presenting to the technical public such a compendium of information with the result that many still make use of the old edition as a standard reference on this subject. This year's revision prepared jointly by the A. S. T. M. Committee A-10 on Iron-Chromium, Iron-Chromium-Nickel and Related Alloys, and B-3 on Corrosion of Non-Ferrous Metals and Alloys, with the cooperation of the various manufacturers, represents a great advance, not only in the number of materials described but also in the manner of presenting the data so as to render it of more complete utility.

The Technical Association is represented on the A. S. T. M. Committee A-10 by J. D. Miller of the York Haven Paper Company, and chairman of the TAPPI Materials of Construction Committee.

Copies of these tables may be obtained at $1.50 a set from the American Society of Testing Materials, 1315 Spruce street, Philadelphia, Pa.

Japanese Paper Production

Production by the mills of the Japanese Paper Manufacturers Association during the eleven months ended November 30, 1930, is reported at 627,848 short tons as against 651,370 short tons during the corresponding period of 1929, a reduction of about 3½ per cent. Sales during the same period amounted to respectively 610,963 tons and 630,472 tons. Consumption by the paper mills during 1930 is reported at 55,096,330 cubic feet of pulpwood, 9,611 tons of rags, 8,503 tons of straw, and 33,049 tons of waste paper. Wood pulp production comprised 232,755 tons of chemical and 205,190 tons of mechanical pulp. In addition 56,759 tons of the former and 2,969 tons of the latter were also purchased for use in the mills.

Rotary Pulp Screen

A machine for screening pulp is illustrated and described in detail in a recent bulletin issued by the Valley Iron Works Company, Appleton, Wisconsin. This screen uses flat slotted plates. A copy of this bulletin will be sent free upon request.

Testing of Paper for Water Resistance*

By Philip W. Codwise [1]

Your committee on water resistance has continued its work during the past year toward the establishment of a standard method for determining the total resistance of paper to water penetration, or, in other words, a standard method for estimating the total "size resistance" of the sheet. There is undoubtedly a great need for such a method, and although the developments during the year have not been such as to allow us to present one with our definite recommendation, yet we do feel that we are nearer to the objective.

During the early part of the year an extensive investigation was made through the generous cooperation of the committee membership, of the relative accuracy of the dry-indicator method and of the curl method upon five different types of paper but the results of this cooperative work, as of previous work of a similar nature, were not conclusive and indicated that further development was advisable. Both methods graded the five lots of paper in the same order, and individual operators were able in general to closely check their own results, but when all of the figures were assembled there was not sufficient agreement between the various operators to justify further cooperative work without first making a critical investigation of the variable factors involved. In the interval, such an investigation has been made and we will now report our findings and conclusions.

Dry Indicator Method

A careful survey of available methods leaves little doubt that the dry-indicator method offers the greatest promise of development to a universally acceptable standard test for the degree of total size resistance. There undoubtedly will always be special tests more particularly applicable to certain requirements of particular papers, but it is believed that as a generally acceptable one, the dry-indicator test will prove most satisfactory. For this reason, the subsequent work on water resistance has been confined to the dry-indicator method.

A comparison of the results of dry-indicator tests submitted by the different committee members indicated that in certain cases a constant huge error had occurred which should be located; this is evident when we state that certain operators reported figures only about one-half as large as the average of other operators. Consideration of the matter indicated a probable difference in the action of the indicator powders used in certain cases; these had been prepared by each operator following the conventional directions. To check this point samples of the indicator used by six different laboratories were obtained and their action determined upon the same lot of paper. This investigation showed without doubt that the character and the make-up of the indicator powder must be rigidly specified, as average results of the six samples varied from a high of 87 seconds to a low of 40 seconds upon the same paper. The low indicator coincided with the low figures in the co-operative tests.

Undoubtedly there are many dyes that can be used in the mixture and produce identical results. In our original directions we specified either methyl violet or saffranine. However, there are many dyes that are unsatisfactory for our purpose and the problem is to prevent results being reported from the use of such dyes. The low figures above were obtained from a mixture made with an aniline blue that is apparently super sensitive; we have also found that a mixture made using methylene blue is not entirely satisfactory. To reduce confusion on this point to a minimum, we are specifying that future dry-indicator work be done using methyl violet as the only dye and that DuPont's N. E. grade and National Aniline and Chemical's 2 BP have been tested and approved.

Another point that has been brought up in connection with the dry-indicator powder is in regard to its stability. The majority of operators have not questioned this point but on the other hand certain ones have noted a tendency for the indicator to change in character with use. This also we believe to be due to a difference in composition of the indicators due to the fact that some were made up with a sugar containing added starch and some with pure sugar. As a mixture made with pure sugar discolors more easily on standing an investigation was made to determine the effect of starch upon the indicator. It was found that an indicator made with sugar containing 3 per cent added starch gave the same results as one made with a mixture of nine parts of pure sugar and one part starch. Due to the excellent stability of the latter mix it has been adopted. In order that a uniform grade of sugar may also be used we are specifying the use only of tablet sugar, such as Crystal Domino tablets, which should be ground in an agate mortar and desiccated before mixing.

In connection with sugar-dye mixtures it should be pointed out that they tend to discolor as the result of friction and that the mixing of the ingredient by grinding will cause them to be seriously dark in color instead of the light tint desired in order to obtain the maximum sharpness in color change during the tests. We, therefore, are specifying that the mixing be done by successive sievings through suitable screens. The details of the procedure are given in the directions for the Dry-Indicator test later in this report.

What has probably been the most serious objection to the dry-indicator test in the minds of most workers has been the indefiniteness of the end-point. Such uncertainty is more or less common to all tests determining rate of penetration and has received our most careful consideration. The earlier directions called for the end point at the first appearance of color and employed a double coverage over part of the specimen to serve as a reference area to detect the first discoloration through a contrast of colors. Although the first spot discolored might, at first thought, be considered as the most definite point yet careful consideration will show the possibilities of such a reading being misleading, as a gauge of the average size resistance of the product, especially with papers of uneven formation or with ones that are not entirely free from foreign particles or dirt specks. Again it has been suggested that the end-point might be taken when the test area has been completely discolored but there are also practical objections to this procedure, as it is often found that there are small portions of the test area which lag far behind the remainder in discoloring. This may be due to a number of causes such as hard spots in the sheet or on the surfaces or to the entrainment of small air pockets between the surface of the water and the test specimen. As it is evident that close agreement between different operators would be questionable for any other single end-point we have adopted a double end-point, by taking two readings and reporting the average of the two. The end-point adopted should be as closely as possible a gauge of the sizing characteristics of the sheet and for this reason we are taking our first reading when twenty-five per cent of the area is estimated to have changed in color and the second reading when seventy five per cent of the area has discolored. It is believed that such a method will go far toward eliminating personal errors and in centering the operator's attention upon the necessity for closely estimating the correct amount of discoloration. In view of this method of obtaining the readings it has been decided that the double coverage of part of the area was unnecessary and that the correct readings could be more accurately obtained without it.

[1] Member TAPPI, chemical engineer, Certain-teed Products Corporation, Buffalo, N. Y., and chairman of the Sub-Committee on Water Resistance of Paper.

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., Feb. 17-19, 1931.
Contribution of the Paper Testing Committee.

Humidity and Temperature Effects

It is undoubtedly true that the moisture content of the paper at the time of testing affects the result and it is possible that the past exposure history of the sample, as governed by atmospheric conditions in various parts of the country and at various times of year, plays its part in the result obtained. Another uncertain factor that must be considered in cooperative committee work is that paper is not strictly a uniform product, no matter how carefully the test lot has been selected, and that even slight variations in formation, weight, and thickness, from spot to spot, may have their effect upon the sizing test results. Work has been done by the committee membership to determine the magnitude of the effect of variations in moisture condition of the sample upon the result. Taking a rather extreme variation in conditions by comparing tests upon the same samples seasoned under the standard conditions of 70 deg. F. and 65 per cent relative humidity with ones seasoned for 24 hours in a desiccator over calcium chloride, we find that the desiccated sample gives an increase in sizing test averaging 22.7 per cent for three different types of paper. It is specified that the tests be conducted under the standard atmospheric conditions of 70 deg. F. and 65 per cent relative humidity; it is further specified that the cover glass as suggested by Mr. Carson, the originator of this method, in his original paper, be used as a regular feature of the test which should serve to minimize the effect of slight differences in the atmosphere during the test. The variations in any lot of paper make it advisable to test a number of sheets from any lot and report the average results. To eliminate the effect of such variations in further committee work, we propose that instead of distributing test sheets, sets of test specimens will be made up from the same sheets and distributed to each laboratory. There are so many variables affecting sizing test results that it is felt that work for the present should be confined to ordinary papers not over .009 inches in thickness; after an acceptable method has been adopted for paper, attention can then be directed toward the additional factors involved in testing the heavier sheets or paper board. At the present time cooperative tests are under way upon a tub sized bond, a beater sized ledger, a medium weight kraft paper and a coated lithograph paper. We expect to report these results early in the coming year.

Before giving the new directions for the dry-indicator test, which have been developed as the result of the investigations described above, we wish to touch upon the importance of careful regulation of certain of the variables affecting the test results. Of first importance is the necessity of maintaining the temperaure of the testing water at exactly 70 deg. F. Even one or two degrees difference in this temperature will adversely affect the results and any large difference in temperature rendered the figures of no value. This is shown by the fact that in a series of representative tests results were obtained showing an average variation from the correct figure of 4 per cent for each degree Fahrenheit that the bath was over or under 70 deg. F. Another point that may seriously affect the results is the thickness of the sprinkling of indicator powder. It should be noted that the directions state that the surface should be covered with a uniformly thin sprinkling of the powder and that the surface of the paper should be visible between the grains of powder. This point should be carefully observed as it is possible to get results that are 18 per cent high by using even a moderately heavy layer of indicator and results that are double the correct figures are possible in case a layer of powder of appreciable thickness is applied so as to form a covering over the particles in direct contact with the paper.

The directions for the dry-indicator test are as follows: The dry-indicator Method depends upon the fact that a mixture of finely divided dry sugar and dry water-soluble dye immediately develops a distinctive color when coming into contact with minute quantities of water. It therefore follows that by sprinkling such a mixture upon the upper surface of the test specimen and subjecting the opposite side to the action of water a reproducible end-point may be obtained that is a gauge of the degree of water resistance of the product. We are dividing these directions into five sections as follows:

(1) Preparation and Care of the Indicator Mixture

Pulverize a quantity of tablet sugar such as Domino Lump Sugar (100% pure cane sugar) until it all passes through a 100 mesh sieve and place this powder in a desiccator over Calcium chloride. Also sieve through a 100 mesh screen a quantity of soluble starch (Baker's Analyzed) and place in a desiccator. Finally pulverize and sift through a 100 mesh screen a small quantity of dry methyl violet dye (either DuPont N. E. methyl violet or National Aniline and Chemical 2 B.P. methyl violet) and also place in a desiccator. When thoroughly dry weigh out the following: 45 gms. pulverized sugar, 5 gms. soluble starch and 1 gm. methyl violet. Mix these ingredients thoroughly by sifting repeatedly through a suitable wire screen (such as 60 mesh) until a uniform mixing has been obtained. The starch is necessary in the indicator to preserve it and render it stable; furthermore, mixing by screening is essential to avoid discoloration which occurs when grinding the ingredients together.

The finished indicator powder should always be kept tightly sealed when not in use and should not be allowed to stand for any length of time in the open top shaker unless the shaker is itself kept in a sealed jar.

(2) Apparatus Required

In addition to the special dry indicator just described the apparatus needed for this test may easily be assembled in the laboratory. This includes a suitable pan, a short glass cylinder having both edges ground, a small beaker with a smooth bottom, a Fahrenheit thermometer, two stop watches, and a sieve top small hand shaker. Any dish having a depth of 2½ to 3 inches may be used as the pan. For the glass cylinder, an oil cup replacement glass serves excellently as it comes with both ends carefully ground. We recommend the use of one 1⅞ inches and 1⅝ inches inside diameter which may readily be obtained from a mill supply house. Using the cylinder just mentioned, a 100 c. c. Pyrex glass beaker serves well as a cover glass to protect the sample as, when used right side up, the bottom is generally just enough concaved to avoid disturbing the sample and to still act as a protector to the surface from evaporation of moisture. The shaker is most readily prepared from a small glass bottle having a metal screw top; this is done by cutting away most of the metal of the flat top and fitting a piece of 70 mesh wire in its place; when the top, with wire fitted inside, is screwed into place, it serves our purpose admirably.

(3) Preparation of the Sample

The samples for test should be seasoned under the standard conditions specified for testing paper, i. e. 70 deg. F. and 65 per cent relative humidity, and the test should be carried out under these atmospheric conditions. To prepare the samples for test cut the specimen to size 2¾ x 2¾ inches. A thin uniform sprinkling of the indicator powder is then dusted upon the upper surface of the sample by holding the shaker, which has been partly filled with the indicator powder and with the top firmly in place, upside down in a vertical position over the sample in one hand and tapping the glass bottom gently with the other; by gradually moving the shaker and continuing the tapping a very thin and uniform sprinkling of particles may be distributed over the sample in such a way that the surface of the paper is visible between the particles.

(4) Conducting the Test

The pan is filled to a depth of 2 inches with water and the temperature of the water is carefully adjusted to exactly 70 deg. F. The small glass cylinder is placed in the pan with one ground edge resting on the bottom. The depth of water is then given a final adjustment so that the uper ground edge of the glass cylinder is just below the surface of the water.

[3] F. T. Carson, "Testing Paper for Permeability to Liquids," Technical Association Papers, Series VIII (June, 1925), page 91.

The test is started by placing the prepared sample on the surface of the water, centering it over the glass cylinder and immediately placing the beaker right side up over the sample, also centering it upon the cylinder; simultaneously with placing the sample upon the water both stop watches are started. With the properly adjusted height of water the wetting of the under surface is positive and the natural curl of the paper prevents the water going over the edges. Care should be taken to prevent air bubbles being caught on the under surface of the specimen and at end of the test the sample should be examined to be sure that air bubbles have not affected the area remaining uncolored as this is a possible source of error.

The sample is continuously watched by looking down through the centre of the beaker for the appearance of darkened or discolored areas indicating penetration of water through to the upper surface of the sheet. Two readings are taken as follows—One stop watch is stopped when it is estimated that 25 per cent of the exposed area has changed in color. The second stop watch is stopped when it is estimated that 75 per cent of the area has changed in color. The bottom of the beaker employed as the cover glass should be carefully cleaned and tested for the absence of color before another test, by examining a piece of white paper through it.

(5) Interpretation and Reporting of Results

The result to be used as the sizing test will be the average of the two readings. The test should be carried out independently first with the wire side in contact with the water and then with the felt side in contact with the water. If it is desired to report an average sizing figure for the sheet the average from the two sides may be used. In arriving at the final result at least five representative samples should be tested from each side of sheet.

Conclusion

In conclusion the chairman wishes to express his appreciation of the cooperation and interest shown by the committee members during the year. Progress has necessarily been slow but it is believed that the material developed above brings us closer to establishing a standard method which will be generally acceptable. Suggestions and expression of opinion will be welcome from all interested in establishing a standard method for determining size resistance of paper.

Two Years Progress in Corrosion Resistance*

By John A. Mathews[1]

Two years ago I had the pleasure of discussing with you the subject of corrosion resistance in the paper industry. The meeting was held in the celebrated Waldorf Astoria Hotel on the site on which there has since arisen an 80 story building, in which some 300 tons of corrosion resistant material has been used. A little earlier the Chrysler building employed possibly the same amount in many portions of exterior and interior trim. Within the same period the automotive, petroleum, aviation, chemical and other important industries have made great progress in the use of similar material,—the so-called 18-8 alloy, which has received a great deal of attention on the part of the paper industry as well. In contrast with this recent display of what we may call "corrosion consciousness" I would remind you that we first produced steel of the 18-8 type in 1917 and it was publicly exhibited 11 years ago and the general characteristics of this, and similar types of steel, were fully described by us in 1921. Six years ago the writer discussed "austenite and austenitic steels" broadly in the Howe Memorial Lecture before the Institute of Mining Engineers. The steel makers, here and abroad, were, therefore, conscious of the problems and possibilities many years before industry itself awoke fully to the use of materials which had long been available.

Progress in the use of these materials in the paper industry has met with both success and failure and the writer has had the opportunity of examining both kinds of results. It may be well to discuss the subject from this point of view and to offer some explanations of certain failures that have been brought to his attention. The general features of corrosion resistant steels have been ably presented to you in 1930 by T. H. Nelson and by Walter M. Mitchell.

The material known as stainless iron or chrome iron, has met with continued favor in connection with beaters and jordans. Its use has extended very rapidly in this field and for the most part with very great success. In a few instances, where disappointment with results has occurred, the causes have been associated in some instances with the materials used in the mill, and sometimes with mechanical failure, an examination of which strongly suggests the accidental presence within the jordan of some hard substance which has actually torn and broken out the edges of the blades. It has been the practice to use these blades in the condition as supplied by the mills, i.e. they must be supplied in a condition to permit punching or machining the necessary slots. This condition does not represent the condition of maximum corrosion or wear resistance. It is in the nature of a compromise and if the bars were to be supplied in a condition suitable for fabrication and later followed by a special heat-treatment and pickling treatment, there is reason to believe that even better results might be attained, particularly, in those cases where rusting or corrosion has been the cause of complaint.

Heat Treatment Effects

With reference to the austenitic chromium-nickel steels of the 18-8 variety and its modifications, your Committee on Materials of Construction has presented to you the results of some very interesting tests where the metal has been subjected to sulphite liquors and gases. We submitted samples of our Rezistal KA-2 to this committee, and the average loss in "inches of penetration per year" on the material we submitted was 0.000118, as the result of a total of 1450 digester hours in three different installations in Pennsylvania, New York and Canada. This is practically perfect resistance and these excellent results were due to a combination of two factors,—an appropriate analysis was submitted and the material had been given the Strauss treatment. I have four discs representing material of similar type which were subjected to tests by an individual mill. These illustrate very well the benefit of suitable heat-treatment of steel of this type. One of the discs represents the material in the as-rolled condition, but the disc itself was given a finely ground surface. After only ten cooks in the digester this disc showed a very badly pitted surface. The three companion discs represented the same steel previously heat treated by the Strauss method. These three discs represented three different conditions of finish,—pickled, ground, and polished. After fifty cooks each the surface on all three of these discs was such that it was readily possible to detect what the original finish of the disc had been. The difference of heat-treatment alone accounts for the difference in results in this experiment.

* Presented at annual meeting of TAPPI, New York, N. Y., Feb. 17-19, 1930. Contribution of the Materials of Construction Committee.
[1] Vice president and Director of research, Crucible Steel Company of America, New York, N. Y. Contributing Member TAPPI.

A cast valve which failed after brief use in a sulphite mill was sent me for examination. The valve was very deeply pitted; in fact, they were not pits but holes and the material resembled good Swiss cheese. An examination of this valve accounts for the difficulty. Without this examination, 18-8 as a type might have been condemned for this service. The trouble with this piece was that the carbon was too high and the chromium too low and the casting had received no heat-treatment. While subnormal in composition, its corrosion resistance could have been improved greatly had it received the Strauss heat-treatment. The difference in corrosion resistance was apparent when we polished and etched the casting as-received. In this condition it could be satisfactorily etched in 10 per cent nitric acid in alcohol. A portion of the valve after heat-treatment could not be etched in alcoholic nitric acid. The material as-received, showed signs of rusting in water after a period of 20 hours. The material after heat-treatment showed no signs of rusting when immersed in water. With material which has in general given such a good account of itself, in cases of failure we should look for the reason and not condemn the material off-hand without investigation. It may not be what it was supposed to be.

Effect of Molybdenum in Alloys

In contrast with this failure we have a report on a 2½-inch valve and 12-inch nipple used on a relief line and after over 800 cooks no loss or attack was noted. This valve, however, was the molybdenum bearing modification of the 18-8 steel of the Krupp-Nirosta Company,—the type which we designate as our Rezistal KA-2-M. This modification has met with considerable success in the paper industry, notably in Canada and abroad. I frequently hear it stated that it seems to possess no merits over the straight 18-8 steel; in fact, laboratory tests that we have conducted in sulphurous acid would seem to indicate that there is little to choose between the two steels, but on looking further into the matter it appears that the KA-2-M offers a decided improvement in cases where high pressure enters into the problem and possibly it is not the pressure itself but the stresses produced by the pressure in an actual installation. In other words the effect of uniform pressure exerted on samples suspended in the digester may not be very noticeable, but if the material were part of the digester itself and subjected to altermate heating and cooling and expansion and contraction, etc., it is reasonable to expect that the KA-2-M would be superior to KA-2. In the first place, the molybdenum is a considerable strengthener and makes the material more capable of resisting stresses to which it is subjected. In the second place, molybdenum is a considerable inhibitor of the effect produced by low temperature annealing which results in intergranular penetration adjacent to welds. In those cases where the welded material cannot be subjected to a suitable heat-treatment, after fabrication, our main reliance on resistance to intergranular penetration near the weld is due to the use of very low carbon content in the steel, aided by the presence of a considerable amount of molybdenum. The cause of intergranular penetration has been ascribed to precipitation of carbides, which may occur within a temperature range of 1000/1400 deg. F. as a result of heat running back from the weld itself. Such a reaction before its completion requires both time and temperature and whether or not it will occur in any particular application depends also upon the nature of the electrolyte in contact with the metal. Fortunately, in a very large number of welded structures which have been produced during the last three or four years, this type of failure has not been frequent.

Embrittlement and Means of Prevention

A theory which has been advanced to account for this phenomenon is that of precipitated carbides. It has been stated that the carbon precipitated is combined with a relatively large proportion of chromium,—one authority stating that the chromium is approximately 16 times the weight of the carbon. It has also been assumed that because of the general sluggishness of reaction in austenitic steels, this chromium carbide by precipitation impoverishes the chromium content in an extremely localized area surrounding the carbide and that as a result, potential differences may be set up within the metal itself permitting corrosion to occur between the homogeneous high chrome portions of the grains or crystals and the local chromium-impoverished areas. In view of the assumed sluggishness of reaction in austenitic steels, it is perhaps a little surprising why the carbide precipitation should be so largely concentrated at grain boundaries where the subsequent intergranular penetration occurs. We do not know that this is the last word in explanation of the phenomenon or not but I was recently told of an experiment in which some 18-8 material was held within the embrittling zone of temperature for 2500 hours and even after this period was subject to intergranular attack. One might feel safe in assuming that 2500 hours was a sufficient time to have permitted the re-establishment of a homogeneous diffusion of chromium throughout the mass. It would seem as though the precipitated carbides were most harmful when of a sub-microscopic size and that no particular harm is done when coalescence has taken place, resulting in sizeable carbides easily seen under the microscope.

Preventative Measures

Possible methods of guarding against this type of failure are (1) heat-treatment after welding, when possible, (2) by the use of very low carbon material and (3) sufficient work has been done to indicate that certain added elements tend to retard the tendency to so-called carbide precipitation and the resulting tendency to intergranular attack and embrittlement.

There are other cases in which heat-treatment should be resorted to. Recently there was submitted to me a tube made of 18-8 material which had failed locally after being for a very short time in sulphite liquor. This tube had been bent into a hairpin bend and the failure was entirely localized on the bent portion of the tube. The cold bending had unquestionably lowered the resistance in the portion that was work-hardened by the bending and the effect of cold work should have been relieved by subsequent heat-treatment, putting the entire tube in a homogeneous condition. The extent of the work-hardening was indicated by the fact that the major portion of the tube showed a Rockwell hardness of 83 on the B scale, while in the stressed portion the Rockwell hardness was increased to 102.

Electrolysis

Another type of failure that has occurred has resulted from electrolytic attack due to the use of different metals in contact with sulphite liquor. In general, this condition should be avoided wherever possible or dissimilar metals should be selected with reference to the least possible potential difference. Stainless iron, for example is anodic with brass, bronze and Monel Metal. The potential differences, however, can be minimized by a suitable heat-treatment of the stainless iron and by the use of relatively high chromium content.

New Problems

There is much to encourage us as the result of both the experimental and commercial use of these materials in the paper industry. Some of the failures that have been noted can be explained. We shall know better how to use these steels when we understand better their metallurgy and properties. They are so different in character from the customary engineering material with which we have been familiar for many years that we have presented to us many new problems in connection with their use. I do not know of any subject in the steel industry that has been the subject of so much research as have the corrosion resistant steels during the past five or six years, and I am quite confident that the actual use of these materials in industry has only commenced and that another two years will show practical accomplishments based upon the results attained by research and cooperative effort between industries such as yours and mine.

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts and Bibliography of the Technical Association of the Pulp and Paper Industry

Clarence J. West, Chairman

For photostatic copies of articles appearing in the Abstract Section, address the chairman of the Abstracts Committee, Dr. Clarence J. West, National Research Council, 21st and B. Streets, Washington, D. C. The charge for this service is: Photostats 9 x 11 inches, 18 cents each; 18 x 11 inches, 35 cents each; 22 x 18 inches, 70 cents each; minimum charge, 50 cents. Payment should be made upon receipt of invoice. Copies of United States patents may be obtained from the U. S. Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Power House

Choice of Liquid Combustibles. Dipl. Ing. Ernst W. Steinitz, Berlin, Germany. Papier-Fabr. 28, No. 10, 154-8 (March 9, 1930).—The viewpoints concerning the evaluation of liquid combustibles for Diesel motors and for gasoline motors are discussed and a few current mistakes are cleared up.—J.F.O.

Plate Air Heater Without Riveting or Welding. Pradel, Papier-Fabr. 28, No. 5, 72-74 (Feb. 2, 1930).—The construction of the air heater as well as its special advantages over the other types is discussed.—J.F.O.

Amount of Power Consumed in a Power Station. H. Schlicke. Papier-Fabr. 28, No. 14, 241 (April 6, 1930).—Short discussion of the power consumed by the auxiliary machinery.—J.F.O.

Largest Steam Storage Installation in the World. M. Schrewtner, Papier-Fabr. 28, No. 14, 242 (April 6, 1930).—To take care of the peak load of the city of Berlin, sixteen Ruths Steam Accumulators are used. An account of the installation is given.—J.F.O.

A. E. G. Water Jet Air Vacuum Pump. Kruger, Papier-Fabr. 28, No. 14, 243 (April 6, 1930.)—A description of the design and operation of the pump.—J.F.O.

Equalizing Steam Accumulator in a Paper Mill. Ernst May, Papierfabriken Jul Glatz, Niederfels. Wochbl. Papierfabr. 61, No. 17, 546-553 (April 26, 1930).—A thorough description of the accumulator and its operation. Through a series of curves and diagrams, the value of the accumulator is shown. Before the installation of the accumulator, the pressure in the boilers varied from 1½ to 2 atmospheres, often greater, while after the installation of the accumulator the boiler pressure was maintained constant within one-tenth atmosphere. A 12 to 15 per cent saving on coal, besides a great number of other economies are effected.—J.F.O.

Highly Sensitive Self Recording Heat Flow Meter. Kruger Papier-Fabr. 28, No. 16, 274-6 (April 20, 1930).—Radiation losses are measured by placing a plate with thermo couples near the source of heat. It has been found that the heat loss or radiation of the wall is proportional to the temperature difference between the plate and the wall.—J.F.O.

Arrangement to Protect Evaporators and Similar Apparatus From Deposits (Accumulative) in an Electrical Manner. Siemens-Schuckert-Werke G.m.b.H. Berlin, Germany, Swedish pat. 68,699 (Nov. 13, 1926).—Anodes and cathodes are so arranged that the circulating liquid must pass through a non-heating chamber after coming from the electrical treatment, before coming in contact with the surfaces carrying the heat.—J.F.O.

Heat Unit. Volkmar Hanig & Co., Heidenau, Germany. German pat. 490,558 (Dec. 31, 1924).—The invention concerns a heat unit in whose large outer mantel, heating tubes are built. The unit is also provided with an inner mantel, and the space between the mantels is filled with heating liquid.—J.F.O.

Process and Arrangement for Decreasing the Formation of Boiler Scale in Evaporators and Similar Apparatus by Means of electricity. Siemens-Schuckert-Werke A.G. Berlin, Germany. Norwegian pat. 47,292 (Nov. 17, 1926).—An electric current is concentrated at the place where the evaporated liquid is at its highest temperature.—J.F.O.

Arrangement for an Electric Guard for the Heating Tubes of Boilers, Evaporators and Similar Apparatus, Against the Deposit of Incrustants. Siemens-Schuckert-Werke G.m.b.H. Berlin, Germany. Austrian pat. 115,851 (July 15, 1929).—Anodes and cathodes in the boiler being protected, are arranged in such a manner, that the liquid permeated by the current, immediately after the electrical influence, can reach only those surfaces on which the deposits are unharmful.—J.F.O.

Pump Installations. Reginald Trautschold. Paper Trade J. 90, No. 18, 50-58 (May 1, 1930).—Examples are given of various pumping installations, which are in each case examples of good and sound pumping practice, to bring out the changes in pumps and pumping practices which have taken place during the last 10 years.—A.P.-C.

Water for Use in Paper Making. Mathieson Alkali Works. Eng. pat. 324,547, (Feb. 15, 1929).—Water used in paper making (either before or after the paper making operation) is chlorinated sufficiently to leave in the white water a small chlorine residue (preferably 0.5 to 1.0 part per million) and the chlorine-containing white water is subjected to coagulation to recover for re-use a sterile product containing the short fibers.—A.P.-C.

Applications of Sodium Aluminate in Water Supply Systems of Pulp and Paper Mills. G. J. Fink. National Aluminate Corp. Cellulose 1, 38-42 (March 1930).—After reviewing the influence of the various impurities found in natural waters on the different phases of the paper making process, the advantages of sodium aluminate for its treatment are discussed.—A.P.-C.

Refractory Protections. Reginald Trautschold. Paper Trade J. 90, No. 24, 45-56 (June 12, 1930).—A discussion of boiler setting maintenance, showing that in modern refractory practice three distinct physical properties of the materials employed have to be taken into consideration, namely, thermal refraction, thermal conduction and thermal insulation.—A.P.-C.

Water and Steam Purification. Reginald Trautschold. Paper Trade J. 90, No. 20, 46-54 (May 15, 1930).—A discussion of the importance and necessity of efficient water and steam purification or proper boiler operation and of the factors involved, giving examples of benefits realized and economies effected in a number of specific instances.—A.P.-C.

Power-Steam or Hydro, or Both. Wm. W. Tefft. Fargo Engineering Company, Jackson, Mich. Paper Trade J. 90, No. 17, 53-58 (April 24, 1930).—In making a comparison of steam with hydro power, all pertinent factors must be included, as conclusions based on only part of the factors will be valueless. It is considered that steam power is superior where need for power is immediate, where the more profitable hydro sites have already been developed, and where the actual load factor is very high. Hydro power is superior in reliability and as reserve capacity, and can operate to advantage at a much lower

load factor than can steam. The paper deals largely with load factor. Curves based upon a large number of developments in each case indicate that usually for 60% load factor or less the hydro plants are superior, and no steam plant can now be built for 25% load factor that will produce current for 1 cent per kilowatt-hour, while most of the hydro plants can do so. It is concluded that a power system combining both steam and hydro plants can generate power cheaper than either kind of prime mover for the same conditions.—A.P.-C.

Arrangement for the Separation of Dust, Water, Oil and Other Substances From Air, Gas or Steam. Hundt & Weber G.m.b.H. Geisweid, Germany. German pat. 490,244 Kl. 12e Gr. 2 (Nov. 11, 1927).—The steam of gas is lead consecutively through two containers, one lying within the other, arranged with tangential inlets. The invention is characterized by the inlet pipe of the inner separator being bent in the shape of a screw and possessing an axial directed outlet. The opening of the screw shaped pipe lies inverted towards the air stream in the middle of the outer compartment between the axis and the mantel.—J.F.O.

Paper Specialties

Flexible, Transparent Sheet for Wrapping Purposes. F. K. Wickel. Belg. pat. 367,372 (Feb. 28, 1930).—Sulphite-cellulose paper is impregnated with glycerine and coated on both sides with pure albumin.—A.P.-C.

Packing Paper. Frederich K. Wickel. Fr. pat. 668,672 (Jan. 30, 1929).—A transparent, waterproof packing paper is made by treating sulphite paper, which has been strongly calendered, with as much glycerine as it can absorb and drying for 48 to 60 hrs., or the paper may be treated with sodium lactate and then with a solution of white of egg with the addition of tanning agents or supplying agents is spread on both faces, and formaldehyde or ozone is allowed to act thereon.—A.P.-C.

Manufacture and Properties of a Cellulose Product (Maizolith) from cornstalks and Corncobs. C. E. Hartford. U. S. Bur. of Standard Misc. Publ. No. 108, 10 p.p., 1930.—Maize stalks or corncobs are digested for 3 hrs,, use 40 lbs. steam pressure with 10% of their weight of caustic soda diluted to a 1% solution and, after being washed free from alkali, the cooked pulp is diluted with water to a consistency of 4% beaten for 2 hrs., to yield a gel, which is dried in molds at 70° C. The product is a dense, hard, bone-like substance, which is practically unaffected by oil, but softens on prolonged soaking in water; it is somewhat heavier and harder than the hardwoods, and is a good electrical insulator. Possible cheaper sources of maizolith are the fine fibers or pith particles rejected in the insulating wallboard industry, and the soft residue from the process of extracting adhesive material from corncobs.—A.P.-C.

Vazcane Process. George M. Seidel. Vazcane Process, Inc., Marianao, Havana, Cuba, Ind. Eng. Chem. 22, 765,768 (July, 1930).—A detailed description of the process developed by E. Antonio Vasquez for the simultaneous extraction of sucrose from sugar cane and production of board from the bagasse, and of the pilot plant constructed to try it out on a semi-commercial scale. The canes are ground on an artificial, medium-grit, silicon carbide stone; the mixture of pulp and juice is pumped to a continuous diffuser, which is really a 12-stage counter-current washing system, after which it is lightly beaten to remove what few slivers get by the stone, sized with 2% rosin, 0.5% copper sulphate and sufficient aluminum sulphate to maintain a pH of 5.8 to 6.2. The board is formed on a single-cylinder machine, which gives a sheet of sufficient thickness on account of the exceptional freeness of Vazcane fiber. After passing through 5 presses, the moist board is cut into 4 by 8 foot sheets and dried in a 20 platen press, under a pressure which varies with the type of product required.—A.P.-C.

New Process for the Manufacture of Plates and Building Materials. Wrede Papier-Fabr. 28, No. 13, 219-221 (March 30, 1930).—The manufacture of board from saw mill waste and old paper is described, together with a discussion of pasting the boards together with sizing materials to give it the desired properties.—J.F.O.

Process and Device for the Manufacture of Board. Gebruder Adt A. G. Wachtensbach, Germany. German pat. 490,621 (Oct. 4, 1927).—The fiber carried on a woolen felt is couched up in layers until the desired strength of the board is reached. —J.F.O.

Process for the Manufacture of an Isolating Sound Deadening Material from Straw and Similar Substances. Ing. Poul Harald Ussing, Lyngby, Denmark, Norwegian pat. 47,409 (March 28, 1928).—The process concerns the treatment of the straw with sodium liquor, milk of lime or similar substances and then washing. The substance is then divided into fibers or fiber bundles, impregnated with metallic soaps until waterproof and formed into sheets or plates upon a wire.—J.F.O.

Process for the Manufacture of Paper or Board Used in the Making of Designs Which are not Printable in a Photographic Manner. Tochon-Lepage & Cie, Paris, France. German pat. 490,455. (July 12, 1927).—An under layer is used on which a stock layer of another color lays. The invention is characterized in that between the layers being engraved and the bottom layer, a layer of a meltable adhering material is used.—J.F.O.

Production of Highly Glazed, Insulating Pasteboard. M. M. Serebriany. Eng. pat. 328,962 (Jan. 30, 1929).—Bark or wood material, worked up in the mill and in the form of dry fiber, is mixed with boiled linseed oil, raw turpentine, etc., with addition, if necessary of solvents such as benzene, turpentine, petroleum, etc., and with or without resins dissolved therein; the paper mass so obtained is worked up into pasteboard on suitable machines.—A.-P.-C.

Method of Working Cardboard and Similar Material. Harry B. Smith assignor to Hoague-Sprague Corp. U. S. pat. 1,772,-785 (Aug. 12, 1930).—Creases are produced in cardboard by moving parallel creasers of substantial length in generally convergent directions in their common plane into contact with opposite sides of the cardboard sheet, pressing the sheet between the creasers while the latter moves longitudinally with the sheet to form a bead crease in the sheet, retracting the creasers from contact with the sheet and moving them longitudinally backward to their starting position.—A.P.-C.

Laminated Board. William F. Hayes assignor to Gagnier fibre Products Co. U. S. pat. 1,770,520 (July 15, 1930.—The board consists of surface layers of paper and an inner reinforcing wire layer held together by a flexible adhesive material, the various layers being combined by calendering. The product is suitable for finishing the interior of motor vehicle bodies, and is characterized by the fact that it is sufficiently flexible to conform to curved surfaces, is water and moisture proof and can be nailed close to its edges without seriously weakening it.—A.P.-C.

Compressed Laminated Product and Process of Making the Same. Lawrence J. Ollesheimer assigner to Sprucolite Corp., Inc. U. S. pat. 1,747,906 (Feb. 18, 1930).—Fibrous material is given a surface treatment with a bonding composition which is mobile at ordinary working temperatures and pressures, so that it partly flows or is drawn into the interior of the material. A number of sheets are stacked so that alternate sheets are at an angle to each other. The stack is then subjected to very high pressure until the bonding composition has permanently set and at the same time it is heated to reduce the moisture content below that of any environment in which the product is normally adapted to be used.—A.P.-C.

Paper Corrugating Machine. Samuel M. Langston on U. S. pats. 1,771,259 and 1,771,260 (July 22, 1930).—No 1,771,259—Means are provided for maintaining the tension of the paper delivered to the corrugating rolls substantially constant, irrespective of varying resistance to rotation of the supply roll and varying take up of the paper by the corrugating rolls. This

consists of a feeding device for withdrawing paper from the supply roll, the speed of the feeding device being automatically regulated in accordance with variations in the takeup of the paper by the corrugating rolls. No. 1,771,260—The device for feeding the paper to the corrugating rolls comprises a feed roll for delivering the paper and an idler roll for engaging the loop of paper between the feed and corrugating rolls. The idler roll is mounted on pivoted supports so as to permit of its up and down movement according to the length of the paper loop. The feed roll is driven by a Reeves drive. The idler roll supports are provided with a gear by means of which the driving speed ratio is varied when the idler moves up or down.—A.P.-C.

Machine for Making Corrugated Board. Edward E. Maston assignor to Mid-West Box Co. U. S. pat. 1,770,757, (July 15, 1930).—After passing through the corrugating rolls, the sheet passes around a drum, the surface of which is corrugated to correspond with the corrugations of the web. The facing sheet is applied to the corrugated sheet while the latter is on the drum. Hollow shoes are arranged in an annular series around the drum and are mounted so as to move radially relatively to it and press the facing sheet against the corrugated sheet. The shoes are hollow and cold water may be circulated through them to accelerate the setting of the adhesive.—A.P.-C.

Pulpboard Coated With Artificial Resin. Harold C. Harvey and Hubert L. Becher, U. S. pat. 1,763,653 (June 17, 1930).—A material is formed of compressed fiber intermingled with a fusible binder such as asphalt, gilsonite, elaterite or red gum and provided with a coating of synthetic resin.—A.P.-C.

Process for the Mfg. of Materials for Electrical Isolation of Wires from Paper or Similar Thin Bands. Naamlooze Vennootschop Handelsmaatschappij, Cablon, Holland. Norweigian pat. 47,384 (Oct. 28, 1926).—J. F. O.

Metal Reenforced Fiber Board. William F. Hayes assignor to Gagnier Fibre Products Co. U. S. pat. 1,770,521 (July 15, 1930).—Layers of fibrous material having relatively hard outer surfaces and relatively soft inner surfaces are applied by means of a flexible waterproof cement to each side of a wire fabric and pressed to form a substantially homogeneous structure. A waterproof coating is applied and stiffening elements are pressed into the board.—A.P.-C.

Plaster-Receiving Board. Harry A. Cumfer assignor of one-half to Willard J. Mason. U. S. pat. 1, 766,982 (June 24, 1930).—The board comprises a flat base sheet with a coating of adhesive waterproofing material on one side, and a second sheet applied to the first. The second sheet is bent or corrugated into a series of alternate channels and ridges so as to form spaced closed pockets when applied to the first sheet. The surfaces of the ridges are provided with perforations, and the portions of the sheet thus cut out are applied to the base sheet practically directly opposite the perforations.—A.P.-C.

Carbon Paper. P. Meyer and H. Gockel. Belg. pa. 364,404, (Nov. 30, 1929).—A water-soluble dye is used in admixture with a water-soluble soap, such as a hard soap or almond oil soap.—A.P.-C.

Adhesive Paper. Papeteries Navarre. Belg. pat. 365,897 (Jan. 31, 1930).—A coating is applied to the paper which is insoluble in but plastified by water and which does not contract or expand by variation of its water content; e.g., a mixture of gelatin, dextrin and barium sulphate,—A.P.-C.

Carbon Paper. F. Peltzer, Belg. pat. 362,730 (Sept, 30. 1929).—A coating weighing less than 35 per cent of the base tissue paper is applied by means of a coating roll partially immersed in the coating bath. A doctor roll acting on the coating roll may be used to regulate the amount of coating applied to the paper.—A.P.-C.

Carbon Paper. Firm of G. Wagner. Eng. pat. 324,859 (Oct. 8, 1928).—The process described in Eng. pat. 307,435 is modified by the application to the paper of a solution, in a volatile solvent, of natural or artificial rubber, gutta-percha, balata or their isomers, together with softening agents such as ethyl phthalate, tricresyl phosphate, oils, fats or fatty acids, with or without vulcanizing agents and accelerators after evaporation of the solvent, the color composition is applied and may be covered with a rubber composition if desired. Mention is also made of the conjoint use of natural or synthetic resins, esters, ethers, etc.—A.P.-C.

Manufacture of Carbon Paper. G. Wagner Gesellschaft. Eng. pats. 307,435 (March 7, 1929) and 324,859 (April 5, 1929).—No. 307,435—A mixture of the pigment (dye wax and oil) with a solution of natural or artificial caoutchouc, gutta-percha, balata, etc., in a volatile solvent, together with softening materials and vulcanizing agents if desired, is applied to the paper and the solvent allowed to evaporate. No. 324,859—The paper is pretreated with the caoutchouc solution containing softening and vulcanizing agents, and, after evaporation of the solvent, a layer of pigment is applied, followed by another layer of caoutchouc.—A.P.-C.

Stencil Sheets. Shinjiro Horii, U. S. pats. 1,753,204 and 1.753,-205 (April 8, 1930).—No. 1,753,204—An ink-impermeable coating is applied to a base of thin Japanese paper of "maximum" felting and greaseproofing qualities, consisting of highly hydrated base fibers. No. 1,753,205 describes the use of a coating consisting of a solution of esters of polysaccharides (other than cellulose acetate and starch acetate) which are insoluble in water, such as cellulose nitrate or starch stearate or mannan acetate, together with an oily or other suitable tempering agent, and aluminum hydroxide or aluminum tannate dispersed in the solution as a homogeneous suspensoid.—A.P.-C.

Stencil Sheet. Paul A. Gollnick and Naomi Gollnick assignors to Selectograph Co. U. S. pat. 1,758,789 (May 13, 1930).—A coating is used comprising an uncoagulated protein, such as glue, in admixture with a vegetable drying oil, such as linseed oil, and glycerine or other suitable tempering agent. Metallic driers also may be used.—A.P.-C.

Stencil Sheets for Use in Sand Blasting. Louis D. Davis. U. S. pat. 1,755,870 (Jan. 28, 1930).—In applying a hydro-soluble rebuffing composition, such as a glue and glycerol mixture, to a surface such as stone to be ensculptured by a sand blast, the compound is reduced to a plastic state, as by water, and is applied to one side of a backing sheet of parchment paper, dried to effect solidification and subsequently moistened and applied to the surface to be ensculptured; the backing sheet is moistened and finally peeled off.—A.P.-C

Composition for Rendering Paper Translucent or Transparent. Arthur H. Huisken and Frank L. Roman assignors to Western Electric Co., Inc., U. S. pat. 1,744,767 (Jan. 28, 1930).—Cocoanut oil, a light paraffin oil, benzine and carbon tetrachloride are used in equal quantities, by volume.—A.P.-C.

Stencil Sheets. Armand de Waele assignor to D. Gestetner, Ltd., U. S. pat. 1,744,870, (Jan. 28, 1930).—Coating compositions are used which include a gelatinizing organic colloid such as gelatin and trimethylene glycol ricinoleate or other suitable higher hydroxy fatty acid tester of an alcohol containing not more than two hydroxyl groups in the alcohol molecule.—A.P.-C.

Production of Stencil Sheets for Use in Duplicating. Armand de Waele assignor to D. Gestetner, Ltd. U. S. pat 1,749,241 (March 4, 1930).—The stencil sheets have a coating composition or ink-resisting medium, the main gelatinized constituent of which is a gelatinized cellulose ester in intimate association with a gelatinized organic colloid dispersable in water.—A.P.-C.

Coated Paper. Gustavus J. Esselen, Jr., and Reed P. Rose assignors to General Rubber Co. U. S. pat. 1,746,888 (Feb. 11, 1930).—Paper is coated with a mixture of rubber latex and filling material including a shellac product and a dispersing agent such as an aqueous borax solution. The coated product is suitable for printing pictures.—A.P.-C.

Adhesive Paper. Louvern G. Lange. U. S. pat. 1,758,610 (May 13, 1930).—A paper suitable for lining bottle caps, etc., has a high gloss and is provided with a coating of varnish on

one surface and a coating of gutta-percha on the other surface.—A.P.-C.

Process for the Mfg. of Metallized Paper Cloth. Dr. Karl Mey, Berlin, Germany. German pat. 490,449 (June 5, 1928).—A thin layer of precipitated metal is lengthened out on a smooth metallic support and fastened to the paper with a binding material. According to claim No. 2, a chromium or tantalium layer is used as a support for the drawn off layer of metal. A binding material is chosen which reacts with the electrolytic bath liquid under evolution of gas. According to claim No. 3 a binding material with an acid reaction is used for the binding of the paper with the metallic layer which is precipitated out in a bath of potassium cyanide. Claim No. 4, the detaching of the metal is assisted by a further bath of acid character which serves to strengthen the precipitate.—J. F. O.

Process for the Two Sided Covering of a Sheet of Paper, Board, Cloth or Similar Material with Metallic Layers, whereby a Metallic Layer in its Previous Form is Brought About. Leopold Rado, Berlin, Germany. German pat. 491,453 (Dec. 10, 1927).—A finely perforated metallic foil produced mechanically by stamping rolls is used as the basic metallic layer. According to claim No. 2, the metallic foil is simultaneously perforated with a thin layer of paper placed underneath. Claim No. 3, the punching of the metallic foil and its under layer or support is followed by a coating of lacquer after the drying of the sheet.—J. F. O.

Process for the Moistening, Softening and Impregnating of Paper, Leather, Fibrous Materials, Artificial Materials and Other Substances. Th. Goldschmidt A. G. Essen-Ruhr, Germany. German pat. 489,681 (Sept. 15, 1927).—The material is treated with condensation products of glycol, with polyvalent alcohols or poly-alcohols, for example, glycerine ethylene glycol, glycerine, propylene glycol, alone or in a mixture of the above, or with the addition of i.e., water, fat, wax, oil or filling material. According to Claim No. 2 the material is treated with polyglycols of triglycol.—J.F.O.

Manufacture of Washable Wall Paper. Jacob J. Janeway. U. S. pat. 1,764,408 (June 17, 1930).—A washable, patterned wall paper is made by applying a coating of waterproofing material to a web of paper, printing a pattern on the coating before it has had time to dry, and then drying the web.—A.P.-C.

Machine for Applying an Adhesive Substance to Sheets of Material. Alfred Peterson. U. S. pat. 1,761,230 (June 3, 1930). The apparatus is intended to apply adhesive in strips of required width. A rotating wheel of the same width as the desired strip is partly immersed in the adhesive liquid. The sheets are fed over the wheel at a different rate of speed from that of the wheel, so that the latter drags the adhesive on to the sheet. Means are provided beside the wheel for depressing the sheet on either side of the wheel to ensure proper contact across the full width of the wheel face.—A.P.-C.

Sensitized "Velvet" Paper for Photographic Use. Daniel Friedlander assignor to A. Meursing and E. J. Gratama. U. S. pat. 1,752,665 (April 1, 1930).—A well-sized sheet of paper is coated with an adhesive material which does not readily dissolve in water; a fine fibrous organic dust such as white wool powder is then spread over the surface and, after drying and removal of the excess material from the surface, the paper is sensitized over the full velvety surface thus prepared.—A.P.-C.

Transparent Paper. J. Chamberlain and H. Periam, Eng. pat. 323,302, (Oct. 30, 1928).—The glazed paper made from highly beaten pulp such as glassine paper is impregnated with a solution of castor oil or like oil in a solvent such as benzene, dried and then impregnated with a solution of a gum such as shellac,

Vulcanized Fiber. I. B. Farbenindustrie Aktiengesellschaft. Fr. pat. 676,113, (June 3, 1929).—In vulcanizing fibers, parchmentizing paper, or like operations, in a continuous process, the action of the sulphuric acid used is retarded by adding to the bath a soluble salt such as magnesium sulphate or ammonium copal or with a synthetic resin, and again dried.—A.P.-C.

sulphate and an organic substance not destroyed by the acid such as urea or the artificial tanning agent described in Ger. pat. 262,558.—A.P.-C.

Wall Board. James J. Hinde. U. S. pat. 1,755,781 (April 22, 1930).—Layers of hard fibrous material of the external casing of pithy plants, such as cornstalks, are alternated with layers of the internal pithy structure of the plants.—A.P.-C.

Method and Apparatus for Saturating Roofing Felt. August E. Schutte assignor to The Flintkote Co. U. S. pats. 1,765,777 and 1,765,778 (June 24, 1930).—No. 1,765,777—The web of roofing felt is passed through a bath of molten asphalt, in which there is placed a cylindrical box at right angles to the direction of travel of the web. The box is provided with a number of parallel diagonal slots, which are spaced so that any plane intersecting the cylinder and perpendicular to its axis passes through at least two of the slots. The sheet, in passing through the asphalt bath, is guided so as to be in contact with the cylindrical box, and asphalt under pressure is supplied to the box. No. 1,765,778—A number of webs of roofing felt are passed through a bath of molten asphalt and are brought together to press them simultaneously and effect thorough penetration of the asphalt.—A. P.-C.

Fire-Resisting Wall Board. Fernando S. Vivas assignor to International Fireproof Products Corp. U. S. pat. 1,754,843 (April 15, 1930).—Porous wall board is formed from cellulose material such as bagasse, wood pulp cornstalks or straw, impregnated with an insoluble calcium resinate soap binder.—A.P.-C.

Process for the Production of Insulating Panels. E. Rudin and H. Kollbrunner. Belg. pat. 366,172 (Jan. 31, 1930).—Several layers of corrugated paper are held together by suitable means without the use of adhesives and are impregnated with coal tar pitch. The panels thus obtained are shaped hot and allowed to cool.—A.P.-C.

Process for the Mfg. of Asphalt-Treated Paper. A Sommer Belg. pat. 363,166, (Sept. 30, 1929).—Molten asphalt is added to the stock and is emulsified by agitation to an elevated temperature, after which the mixture is made into a sheet on a board machine.—A.P.-C.

Saturated Fiber Webs. Neal C. Pike assignor to The Richardson Co. U. S. pat. 1,760,606 (May 27, 1930).—The saturant is applied to one side of the sheet only, and in such a manner that it does not penetrate through to the other side. A priming coat of desired character is applied to the second side.—A.P.-C.

Roofing Element with Thickened Butt Edges and Method of Making the Same. Lester Kirschbraun assignor to The Patent and Licensing Corp. U. S. pat. 1,760,873 (June 3, 1930).—A waterproofing coat is applied to the exposed portion of the upper face of the roofing element, and the coat is extended to cover the exposed edges of the element and to form a narrow marginal area of coating on the under face adjacent the butt edges. A grit surfacing is applied to the coating.—A.P.-C.

Machine for Cutting Strip-Shingles. Herman R. Feedler and Amandus Graw assignors to The Patent and Licensing Corp. U. S. pat. 1,762,330 (June 10, 1930).—Dies are provided which enter the material from below and form a series of tongues which are deflected out of alinement with the main body of the web. The sheet is then fed through a slitter which severs it lengthwise along a line which severs the tongues.—A.P.-C.

Process for the Production of Heat-Insulating Boards. Rudolf Karg and Josef Weiss. U. S. pat. 1,752,561 (April 1, 1930).—Vegetable fiber such as wood wool, shavings or straw is placed in a solution of kieserite containing also magnesite, and after having taken up a portion of the materials from the solution, it is removed and drained and molded into sheets in a mold which is perforated to permit evaporation of moisture from the fiber.—A.P.-C.

Pulp for Building-Boards from Tobacco Waste Material. Robert B. Arnold and Ralph M. Hixon assignor to Tobacco By-Products and Chemical Corp. U. S. pat. 1,756,722 (April 29, 1930).—After extraction of nicotine and water-soluble substances, the

tobacco material is reduced to a mass of matted strips, dried and then beaten in water, together with other materials such as burlap, sawdust, kraft pulp or old news pulp to form a pulp; the latter is formed into sheets and dried.—A.P.-C.

Fibrous Wall Board. Harry E. Brookby assignor to U. S. Gypsum Co. U. S. pat. 1,754,413 (April 15, 1930).—Shredded cornstalk material is cooked with a chemical such as caustic soda in solution under pressure to effect softening and hydration of the fibers, pulped, mixed with peat and further pulped, free from a portion of the associated water, pressed, dried and repressed.—A.P.-C.

Absorbent Paper. George L. Schwartz assignor to E. I. du Pont de Nemours & Co. U. S. pats. 1,757,756 and 1,757,757 (May 6, 1930)—No. 1,757,756—A cellulose fiber mat in the form of a sheet is gelatinized as described in U. S. pat. 1,757,755 until the cellulose fiber is superficially gelatinized, and is then washed to free it from the reagent. The product is suitable for making paper towels, roofing, etc. No. 1,757,757 relates to a process in which a cellulose fiber mat made from cooked cotton fabrics is treated with an aqueous caustic alkali solution at a temperature above the gelatinizing point of the fiber but below 104°C., to obtain a product which is highly absorbent and suitable for making paper towels.—A.P.-C.

Masonite Process. Robert M. Boehm. Masonite Corp., Laurel, Miss. Ind, Eng. Chem. 22, 493-497 (May 1930).—A brief description of the Masonite process (in which the wood is "exploded" under a steam pressure of 1000 lbs. per sq. in.) of the process controls, and of the four products manufactured from the exploded fiber (insulation board, insulation lath, quarterboard, and presswood).—A.P.-C.

Wall Board. Chester E. Rahr assignor to the Flintkote Co. U. S. pat. 1,772,686 (Aug. 12, 1930).—The wall board is built up of multiply perforated corrugated builders' board, having a central ply of fibrous waterproof material and facing plies of paper, and facing layers of plastic material bonded to the paper plies and extending into the perforations.—A.P.-C.

Celotex and Cane-Sugar Industries. Elbert C. Lathrop. The Celotex Co., Chicago, Ill. Ind. Eng. Chem. 22 449-460 May 1930).—A discussion of the consideration which led to the adoption of lagasse as a raw material for Celotex, with a description of the development of the Celotex industry from its beginning in 1920 to the present time, a description of the mfg. process and of the properties and merits of Celotex.—A.P.-C.

Production of Paper, Articificial Leather-Material, and the Like, from Leather Waste. M. M. Serebriany. Eng. pat. 326,936 (Jan. 30, 1929)—Leather waste is swollen and degreased in hot water containing about 5 per cent of salt or turpentine, and is then molded in hot or cold presses. Alternatively, the swollen mass may be pressed into log-shaped piece, which are than converted into fibrous material and run on a paper or board machine optionally after the addition of vegetable or animal fibrous material or fillers.—A.P.-C.

Smoothing of Paper. I. G. Farbenindustrie A. G. Eng. pat. 327,635 (June 6, 1929).—Addition to Eng. pat 310,340. In a modification of the prior patent, the paper is first coated with a substance, such as glue, gelatin, cellulose esters or ethers, which is impermeable to the smoothing agent.—A.P.-C.

Paper Insulation for Electric Cables. George Zapf. U. S. pat. 1,771,946 (July 29, 1930).—The insulation comprises layers of paper pressed to different degrees and impregnated with material having different dielectric constants, the layer of paper lying directly next to the conductor being pressed to the greatest extent and being impregnated with the material having the greatest dielectric constant, so that the dielectric constant of the insulation gradually decreases as the distance from the conductor increases.—A.P.-C.

Paper Articles. Kurt Wandel assignor to Cellulose Products Co., Inc., U. S. pat. 1,771,983 (July 29, 1930).—A number of superposed sheets of soft cellulose are compressed together in a narrow strip entirely around the edges so as to cause the sheets to adhere at those portions but elsewhere to be movable over one another.—A.P.-C.

Method and Apparatus for Making Crepe Paper. Harry Liebeck assignor to Scott Paper Co. U. S. pat. 1,772,185 (Aug. 5, 1930).—The paper is partly dried by passing around a drying cylinder placed between the first and second press. It is creped by means of a doctor co-acting with the dryer roll, after which it is passed through the second press and drying is completed as usual.—A.P.-C.

Mfg. of Transparent Paper Resistant to Fat and Moisture. Realisation des Brevets Francais Amouroux & Cie., assignees of F. C. Wickel. Fr. pat. 631,645 (Nov. 16, 1926).—Highly calendered sulphite cellulose paper is coated on both sides with a fluid, resinous, formaldehyde condensation product and passed between rolls at 120° to 150°C.—A.P.-C.

Decorated Paper. Joseph Rossman. Paper Trade J. 90, No. 18, 64-69 (May 1, 1930).—A review in the form of abstracts of U. S. patents from 1867 to 1929.—A.P.-C.

Protective Edges for Sheets of Paper. Praktische Maschinen G.B.m.b.H. Belg. pat. 362,990 (Sept. 30, 1929).—The edges of the sheet are reinforced with wire.—A.P.-C.

Cellulose Wadding Product. Papeteries de la Robertsan. Belg. pat. 363,030 (Sept. 30, 1929).—Cellulose wadding is applied to one or both sides of plain or corrugated paper by means of adhesive or otherwise.—A.P.-C.

Process for the Mfg. of Decorated Paper. I. G. Farbenindustrie Aktiengesellschaft G.m.b.H. Belg. pat. 364,156 (Nov. 30, 1929).—Color solutions or suspensions are flowed on to the pulp on the wire of the paper machine at a point where the sheet has not yet had time to be formed. The ends of the tubes by means of which the color is delivered dip below the level of the stock and are shaken sideways.—A.P.-C.

Absorbent Felt for Use as a Box-Toe Material. Henry P. Shopneck assignor to Arden Box Toe Co. U. S. pat. 1,744,811 (Jan. 28, 1930).—A box-toe material is formed from a fibrous pulp such as waste rag material having relatively longer silk fibers distributed through it in felted form, and is impregnated with a thermoplastic binder such as an asphalt and resin or celluloid composition.—A.P.-C.

Paper Towel. George A. Richter, Milton O. Schur and Royal H. Rasch assignors to Brown Co. U. S. pat. 1,745,557 (Feb. 4, 1930).—A highly absorptive crinkled paper towel is formed of kraft fiber containing regenerated cellulose imparting sufficient wet strength to the towel so that it will not disintegrate when wiping wet hands.—A.P.-C.

Miscellaneous

Spanish Paper Industry and the Paper Industry at the Barcelona Exhibition. Drechsel, Papier-Fabr. 28, No. 6, 83-89 (Feb. 9, 1930).—J.F.O.

Chemistry and the Mfg. of Paper. Dr. Arthur St. Klein, Papier-Fabr. 28, No. 12, 193-200, No. 13, 213-219 (Mrach 23, 30, 1930).—A comprehensive review of the knowledge of beating, hydration and the sizing of cellulose, also the theory of coloring.—J.F.O.

Mfg. and Treatment of Cellulose in the Paper Industry. James Strachan, Papier-Fabr. 28, No. 12, 200-3 (March 23, 1930).—A short review of the characteristics and conditions of mfg. of the sulphite, sulphate and soda process.—J.F.O.

Cellulose Research in Canada. George French. Cellulose 1, 45-47 (March 1930).—A brief outline of the work carried out during the past three years at the Department of Industrial and Cellulose Chemistry, McGill University, under the direction of Harold Hibbert.—A.P.-C.

Method of Preventing the Formation of Scums and Films Due to the Growth of Organisms on Surfaces in Contact with Water. John C. Baker assignor to Wallace and Tiernan Products, Inc. U. S. pat. 1,745,141 (Jan. 28, 1930).—Relatively minute quantities of chlorine are added to the water at regular intervals.—A.P.-C.

Slime Control with Chlorine. N. A. Cooper. Electro Bleach Gas Company, New York. Paper Trade J. 90, No. 20, 59-60 (May 15, 1930).—A brief discussion of the advantages of the use of chlorine in preventing the formation of slime in pulp and paper mills, particularly with closed white water system.—A.P.-C.

Paper Permanence. Jessie E. Minor. Rag Content Paper Mfgrs. Association. Cellulose 1, 43-45 (March, 1930.—A discussion of the methods of testing the permanence of paper, outlining the program of research on this subject which has been undertaken by the Rag Content Paper Mfrs.—A.P.-C.

Composition of Pulp Ash. Roger G. Griffin. Arthur D. Little, Inc., Cambridge, Mass. Paper Trade J. 90, No. 18, 63 (May 1, 1930).—Analyses are given of the ash of a sample of bleached straw pulp and of two samples each of kraft pulp and of bleached and unbleached sulphite pulp. Considerable difference was noted in the composition of the ash of the two bleached sulphites, which may have been due to one of them having been bleached with a calcium liquor and the other with a sodium liquor.—A.P.-C.

An Electrical Conductivity Method for Determining the Moisture Content of Wood. Alfred J. Stamm. Forest Products Lab., Madison, Wis. Ind. Eng. Chem. (Analyt. Edit.) 2, 240-244 (July 15, 1930).—A simple, compact, and portable apparatus for measuring electrical conductivity has been designed for determining the average moisture content of wood. With a pin type of contact the conductivity measurements can be translated directly into terms of average moisture content, not only when the moisture is uniformly distributed, but also when it is distributed according to any normal drying gradient. The values of moisture content, as determined from their electrical conductivities, for 160 specimens of 25 different kinds of wood showed a mean deviation from the value determined through the loss in weight upon oven drying of 0.6% absolute moisture content and a maximum deviation of 1.7%. The effects of surface films and surface finishes are considered.—A.P.-C.

Process for the Mfg. of Organic Sulpho-Acids Which are Suitable in the Textile and Paper Industry for Moistening, Dispersion and as a Protection of the Fibres. Oranienburger Chemische Fabrik A. G. Charlottenburg, Germany. Norwegian pat. 47,062 (Aug. 1, 1927).—The manufacture occurs under the use of sulphuric acid chlorhydrin.—J.F.O.

Process and Arrangement for the Continuous or Intermittent Regulation of the Specific Gravity, that is the Concentration of Liquids. F. Thunberg, Iggesund, Sweden. Swedish pat. 68, 619 (Feb. 21, 1927).—A liquid column is held at a constant height. As opposite weight an auxiliary liquid column of constant specific gravity is connected in such a manner that its height varies according to the change in the specific gravity, that is, the concentration of the main liquid column, whereby the variation of this auxiliary liquid column is used for the regulation of the specific gravity, that is, the concentration of the liquid being tested.—J.F.O.

Concerning the Uses of a Cable Transporting System in a Paper Mill. M. Freyberg, Wochbl. Papierfabr. 61, No. 11, 349-355, No. 19, 604-613 (March 15, May 10, 1930).—A very comprehensive description of the mfg. and use of a cable transportation system.—J.F.O.

Ultra-Violet Rays in the Paper Industry. A. Segitz, Papier-Fabr. 28, No. 12 (March 23, 1930).—By illuminating with the so-called dark ultra violet rays of the Hanauer quartz lamp, the chemical constitution of the many kinds of paper are brought out by giving various colored fluorescence. The simple determination of distinguishing cellon and cellophane is carried out by ultra violet rays; for by treating cellon with spruce bark extract, a very good fluorescence is obtained which is not obtained with cellophane. Ultra violet rays also serves to distinguish, through its fluorescence, natural plant extracts used in the tannery from the artificial tanning substances.—J.F.O.

Means of Utilizing The Refuse from the Wood Industries. W. Schmid, Papier-Fabr. 28, No. 6, 81-83 (Feb. 9, 1930).—The various methods used in foreign countries for the utilization of the wood waste and the coarse refuse from the pulp and ground wood mills are given. Only 55 to 60% of the wood is utilized in the saw mill, the remainder is now being used in the manufacture of sulphate pulp.—J.F.O.

Process for the Tightening of Acid-Proof Tanks. Gottfried Buchert, Liegnitz, Germany. German pat. 492,870 Kl. 12f Gr. 3 (Oct. 4, 1927).—The process concerns itself with a tank which is formed out of grooved and feathered plates in such a manner that canals occur on the plate outside the joint.—J.F.O.

"Prodorit," an Acid-Proof Material. H. W. Schöller. Papier-Journ. 18, 74 (1930).—"Prodorit" is a newly patented acid-proof material consisting of 90% crushed quartz and 10% bitumen-pitch binder. It can be molded in any desired form or shape, has approximately the same expansion coefficients as iron, is absolutely waterproof, insulates against heat transmission, and approaches porcelain as an electrical insulator. It is black in color, but does not bleed. Parts may be fused together with a torch. It is guaranteed to withstand temperatures up to 80 deg. C. and is not attacked by sulphurous acid, bisulphite liquors, strong sulphuric acid, concentrated hydrochloric acid, bleach liquors, etc. It is structurally strong enough to be used as flooring.

Pollutional Surveys in Wisconsin Paper Mills. L. F. Warrick, Wisconsin State Board of Health; and K. M. Watson, Univ. of Wisconsin, Madison, Wis. Paper Trade J. 90, No. 24, 64-66 (June 12, 1930); Tech. Asso. Papers Series 13, No. 1, 242-244 (May 1930).—A brief account of the survey of pulp and paper mills carried out in 1929 by the Wisconsin State Board of Health, in cooperation with the industry, in an endeavor to reduce stream pollution and increase the recovery and utilization of chemical wastes.—A.P.-C.

United States Patents on Paper Making. Clarence J. West. Nat'l. Research Council, Washington, D. C. Paper Trade J. 90, No. 19, 55-56 (May 8, 1930).—A list in numerical order of U. S. patents on pulp and paper making issued during January, February, March, 1930.—A.P.-C.

Pulp and Paper in Virginia. Lauren B. Hitchcock. Univ. of Virginia. Ind. Eng. Chem. 22, 488-491 (May 1930).—A Brief outline of the present status of the pulp and paper industry in Virginia.—A.P.-C.

Production of Pulp in the Pacific Northwest. H. K. Benson. Univ. of Washington, Seattle, Wash. Ind. Eng. Chem. 22, 818-822 (Aug. 1930).—A discussion of the advantages presented by the Pacific Northwest for the development of the pulp and paper industry.—A.P.-C.

Relation of Porosity to "Strike-Through" of Ink in News Print. Anon. Papir-Journ. 1i, 107-8 (1930).—In news print the absorption of ink must be very rapid without penetration of the ink through the sheet. Penetration may be caused by improper ink for the particular paper in use, low bulk of the paper, irregularities in gauge and weight, and the temperature of the ink. Oil penetration has been found to be related to the porosity of the sheet. Papers containing more than 2% ash resist oil penetration more than papers with less than 2% ash.—C.E.P.

Process for the Manufacture of Paper of Predetermined Thickness. Freiberger Papierfabrik Zu Weissenborn. Belg. pat 362,850, (Sept. 30, 1929).—The paper leaving the machine driers is passed between rolls which are constructed so that the space between them is exactly equal to the desired thickness of the paper.—A.P.-C.

Revolving Cutter. Goebel A. G. Darmstadt, Germany. German pat. 488,589 (March 27, 1928).—The invention concerns a revolving cutter with adjustable roll frames and a direct driven winder roll or driven through the friction on the circumference.—J.F.O.

Section of the

COST DEPARTMENT

of the

American Paper and Pulp Association

Edited by T. J. Burke C. A. Director Cost Dept.

The Value of The Standard Cost Finding System to Management*

By W. R. Ashe[1]

You will agree that the printer is engaged in what is perhaps the most hazardous of all manufacturing enterprises. Each job he undertakes is distinct in some particular, and must be sold, produced and accounted for as an individual order. This involves the necessity of an exact knowledge of department hour costs, and accurately kept records of time and materials entering job production.

If his project is to be successful from a viewpoint of profitable sales, he must exercise a positive control of costs, production and sales in line with economy, and effect a correlation between actual cost and production performance and standards followed in estimating and pre-determining prices.

Profitable Management Under Adverse Conditions

In no day of printing history has competition been keener. Printing statistics bear out the fact that the margin between selling price and cost is gradually lessening because of competitive conditions resulting from an over-equipped industry, disregard for increasing costs, unintelligent management, and many other growing evils.

As a result, an ever increasing number of buyers demand that the printer name prices in advance on a large per cent of his volume. The rest of the printer's business is influenced to a certain extent and this noncompetitive work must be billed at an incontestable price, one that will not be challenged by the customer. Possibility for profit under these disturbed market conditions depends not only on an accurate knowledge of costs and production, but in an ability to control costs, perform work within efficient standards and adjust the entire business to a point where profit can be made on a minimum of profitable sales. In this frantic program there is but one hope and that is to be a better business man than the ignorant competitor.

Solving the Competitive Problem

The printer's problem is not solved by cutting price, by doing more business than his competitor, or by claiming certain advantages. The inevitable loss resulting to those who follow these lines of least resistance should be convincing. The profitable and challenging solution requires a formidable type of management, one which successfully combats competition with highest quality work and service at minimized cost. Under minimized expense the volume does not have to exceed 50 per cent of plant capacity to break even.

A decided competitive advantage exists in accurate cost knowledge under conditions where cost and production are under control, for the reason that a very exact distinction can be made between profitable and unprofitable pricing. The scientifically managed business combats competition's poor quality, the result of volume business at cut prices, with better service on less volume through managerial efficiency which holds all of its operations in positive control and profitable balance.

The profitable program stands four square against indiscriminate meeting of competitive prices. It does not depend on higher than average volume as a means of price reduction. It adheres firmly to a more intelligent and wiser policy of properly relating capital and revenue expenditures to an economic amount of profitably acquired sales with watchful control of all operations, so that capital investments are justified and properly conserved.

The Method and Means

For this type of management it appears that the devices and methods of record and control have a most important bearing, for the reason that the accumulated statistics form, in a fundamental sense, the very foundation and direction of all managerial policy. The system and its application provide the instrumentality upon which management depends for determining economy of relationships and for adjustment of factors to a profit producing balance.

For the past twenty years, Typothetae has devoted constant study to the printers' managerial problems. At the present time a week's convention is given over to this one subject. During these past years Typothetate has developed our present revised Accounting and Cost Finding System for Printers. It is an evolution of practical methods gleaned from experience, and embraces every comprehensive method of financial control necessary to the highest type of management. In advanced usage this system is calculated to make easier the otherwise complex problem of profit making in the most hazardous industry now operating under most adverse conditions.

Because this modern type of scientific management is rejected by the majority, it is therefore the progressive printer's best bet and assurance of profit. The value of management based on statistical revelation does not rest in finding of costs, but in indications which lie beneath surface appearances of the accounting records. These are available from the cost system functions in clear and orderly presentation, so that the manager received a comprehensive grasp of all operations and the influence of all factors on sales and profits.

[1] Manager, Cost and Accounting Bureau, N. Y. Employing Printers Association.

* Typothetae of America Bulletin.

Ordinary Bookkeeping Inadequate

The ordinary bookkeeping system does not furnish sufficient information for the finest adjustment of different financial factors and control of department costs. Seldom are the accounts broken down in such a manner as afford a sufficiently close view of elements composing particular department expenses. It is therefore impossible to measure, from ordinary bookkeeping records, the economy of rent, wages, or any other expense chargeable direct to composing room, pressroom or other departments. It is impossible, also, to weigh the economy of departmental overhead as it relates to direct department cost. Likewise, the relationship of office and selling overhead to total manufacturing effort and to individual department effort is unknown. Without a medium of intelligent breakdown a sufficiently close view and study of all departmental operations is impossible.

The Reason for a Cost System

The Standard Cost Finding System furnishes necessary departmental facts and analyses by a simple amplification of the book accounts. Through its provisions for monthly accounting of departmental costs and income, the economy of total expense cost and total income shown by the general books can be measured departmentally. All under surface trends and conditions in every phase and department of business are brought to light. These are presented in one composite picture from which the manager clearly visualizes his unrealized potential profit, what stands between him and its realization, and how adjustments should be made for a more complete negotiation.

The Standard Cost System in its cumulative record provides comparison of current facts with previously attained standards, so that all abnormalities and inefficiencies appear in time to be corrected before serious dissipations occur.

No printer regardless of practical ability, can successfully manage 10, 15 or 20 different business entities under one roof by observation of physical movements in each department. Good management depends upon a complete and informing system which calls his attention to concurrent trends of finance, otherwise invisible and unknown. These observations can not be made from a monthly balance sheet and monthly profit and loss statement. It remains for the cost system to bring them to light.

Seldom do we find a plant where every department is hitting the ball and contributing its potential profit to the general profit coffer. Rather, we find the common condition of profitable pressrooms from which $25,000 profit is made, and an unprofitable composing room which contributes $12,000 loss, or vice versa. The net result is $13,000 profit, and this is only shown by the monthly statement. There is indication of the many departmental overshadowings that take place in every printing plant.

Its Function in Harmonizing Efforts

In assigning this topic, I wish you had asked me to talk on "How to cash in on the value of the Cost Finding System," as this value is of course non-existent to those who fail to use the Standard System for its primary purpose.

To the modern mind, the type of manager who realizes the existence of competitive advantage and the more certain issues of scientific management, there does exist a very practical possibility for a better engagement of profit. Much money could be saved that is now passing over the dam and beyond realization in offices where cost system direction is ignored.

In order to give you a new and clear conception of the value of the cost system and what it can help you do with your business, we will picture an ideally functioning business. You can better see how impossible it is for an executive to progressively shape an organization and control its every operation with any degree of harmony and satisfactory result by visualizing a perfection none of us can hope to reach without an intelligent medium. A perfect coordination of all factors in the ideally managed business is likened to an orchestra composed of several major parts and many players and instruments in each part. There are violins in one part, clarinets in another, etc. The instruments of each part are perfectly attuned to each other, and each major division is so harmonized with other parts that the whole is one great symphony in which there is no discordant note. Let us think of ideal management in its adjustment of all business factors in these musical terms. The major parts or factors within the ideal printing enterprise, those of finance, selling administration and manufacturing, must be properly harmonized. The personnel and equipment of each factor must be balanced and attuned to its individual standard, and each factor must be balanced with all others so that the whole is coordinated in one harmonious effort.

If such a 100 per cent coordination were possible, with no departmental inefficiencies or dissipations, and no unbalanced relationships between major factors, the result would be a realization of an ideal amount of profit. How many plants operate under such managerial ideals? Yes, this is all theory, we admit; but while we never expect to attain 100 per cent, our set-up or objective should be 100 per cent perfection, no less. You printing managers will find that it pays to be business idealists with your principles of business policy and operation formed and directed by a 100 per cent Standard Cost Finding System.

Let's consider a few examples of the value of this system in order to see how practically instrumental it is in promotion of financial balance.

Relation of Volume to Equipment

Investment of a greater part of capital in fixed assets necessitates control of the relation between plant investment and production volume, because of under-occupancy of machinery, which is in effect an inactivity of capital, results in abnormally high fixed costs. In illustration, the insurance, depreciation and interest cost on a $5000 press is $840 for a year. If production provides 600 productive hours the fixed maintenance cost per sold hour is $1.40. One thousand hours would reduce this cost to 84 cents, and an economic production of 1500 hours would develop an economic cost of 56 cents per hour, at which cost the investment might be justified. If this element of cost in the selling rate can not exceed 60 cents, a loss of $480 would be contributed by this one instance of over-equipment if only 600 hours were sold.

All of the fixed expenses, those that do not fluctuate with production, such as rent, insurance, depreciation and interest on investment, bear this important relation to production. These all must be properly absorbed. It is management's job to determine particular points of economy for these as well as other current expenses of stationary character represented by certain salaries of factory and front office. This can not be done without complete records of individual machine productivity, costs of production, and the adjustment of production to an economic volume, or adjustment to volume possessed.

Relation of Sales to Production Cost and Equipment

In effecting this adjustment nearly all printers have put the cart before the horse by trying to relate volume to equipment, instead of equipment to volume. The average printer is prone to hang a millstone around his neck. He puts in every machine his competitor happens to have, before sufficient profitable volume has been acquired for running machinery the necessary productive hours at which its maintenance cost is absorbed. Intermediate losses arising from an unbalanced relationship of fixed investment to sales, cramp finances to a position of dependence and helplessness. There appears but one alternative, and the result is an affliction of the volume bug, and bang goes the price in an effort to get business.

When high production is reached under these conditions, an uneconomic balance obtains. The printer has an economically occupied plant but a sales price that is in unbalanced relation to plant cost. In final analysis, he overcomes a financial loss faced in unoccupied equipment to confront an equal or greater selling loss and no progress is made.

His position is the same as a dog chasing its tail—the tail is always ahead of the dog, because lower than cost rates are used

in attracting sales, with no attempt to conform actual costs to these rates. This conformation obviously can not be made without the intelligent guidance of a cost system by which adjustments are effected of equipment to production, and correlation made between production cost and sales.

The Value of the System in Cost and Sales Control

The value of the Standard Cost Finding System centers in control of costs and establishment of profitable selling rates. A profitable selling rate must cover cost and leave a margin of profit. It can not be prohibitively high without affecting sales, and must conform somewhat to economic rates met in competition.

The cost system is devised to successfully engage the correlation of actual costs and production with the selling rates and production standards used in estimating and pricing. The amount of profit is determined by the degree of this correlation.

Our system has been subjected to considerable disrepute because at first blush it invariably reveals wide differentials between uncontrolled high costs and the very low rates used in selling. In the presence of disillusionment, its worth does not fully appear, rather it is considerably discounted, until such time as the entire system is used in its higher functions. These functions influence a proper adjustment of equipment to volume, and in addition to determination of cost, the system by such influence works out an economy of cost.

The Correlation of Actual and Used Cost

Its greater value is found in constructive usage for reduction of hour costs, increase of production and regulation of actual and used cost to a point of equalization and position of profit.

The process is best illustrated by a set of balances. When production is in proper relation to equipment, a fundamental balance appears for development of economic costs. Suppose we place the cost of such an ideal volume, plus a small weight representing profit, on one side of the balances. In the other side we must then place an equal sales weight in order to balance the scales. In this manner the cost system first locates a required minimum volume. It next values that volume and reveals what it should be sold for, in order to make a profit. Thus selling rates and the right price for every individual job are determined, if every job is accurately costed at minimized costs, the sales income control is set up. Work must then bring this cost plus a profit.

If costs are too high, and they usually are from 10 to 20 per cent where no cost system is used, some system must be employed for location of reasons for excessive costs. Measures must be taken for lowering high costs to economic costs at which production can be sold. It is here that the cost system proves invaluable, because its records furnish all essential facts for closest possible analysis and discovery of reasons for excessive costs. Suggested means for adjustment of factors and reduction of cost appear from these analyses. The output of men and machines can be progressively increased to set standards, and with all operating elements under control the final economy of cost is established. If it then appears that selling rates are under these minimized costs, the very economy of costs should influence an upward revision of selling rates. Thus an ideal correlation is wrought.

Knowledge of Cost Brings Confidence

A positive knowledge and assurance of the economy of costs brings confidence to estimating and selling departments. An authority is given to values placed on individual jobs when summarized from accurately kept records at minimized costs. Then the salesman can contend for his price as the right price, and in doing so get it, because the cost system reflects what he knows to be an accurate and at the same time an economic job cost.

In summary, the value of the Standard Cost Finding System is found in its possibility for establishment of cost, control of all operations and the several fundamental relations necessary to produce profit. These embrace the following fundamental relationships as well as others too numerous to discuss:

1—The relation of equipment to production.
2—The relation of fixed and current costs to production.
3—The control of costs and production.
4—The relation of sales to production cost.

Underlying the establishment of these fundamentals a coordinate relation is involved between factors of selling, administration and manufacturing. Monthly fluctuation of sales require regulation of overhead within certain confines.

According to volume of business, both administrative and selling expense must be controlled to certain ratios set by economy.

All-inclusive costs may be too high in particular periods where production is low, because of excessive administration costs. Then again, all-inclusive costs may be high because of excessive sales cost.

Unit Costs May Be Excessive

Unit costs may be excessive even under conditions where hour costs are low, because of departmental inefficiency in production. It is apparent that the cost system is indispensable for locating these facts and maintaining economic financial balance in peak and valley periods through scientifically prepared budgets based on past operations. The art of making money in the printing business consists briefly in the ability to efficiently and progressively control selling and manufacturing operations within certain economic limits, and to at all times properly relate overhead expenses to gross profit derived from producing factors.

Where is the executive who can work out these problems without a Standard Cost Finding System? Who can say what such a system is worth? Its value to you may extend as far as the value of your net worth or owned capital, which it fully conserves when devoted to its primary usefulness.

Keeping Metal Healthy

Preventives have been developed in metallurgy to keep metals strong and healthy, just as in medicine to protect man, the Western Metal Congress of the American Society for Steel Treating was told at its meeting in San Francisco this week.

A "hypodermic" injection of nickel in molten gray cast iron prevents the metal from developing a weak structure, according to a paper on "High Test Cast Iron," by Frank B. Coyle, research metallurgist of the International Nickel Company.

This is of interest to the paper industry, he pointed out, because of the use of nickel cast iron in rolls in paper machinery.

"In all grades of gray cast iron," he explained, "some free carbon is present in the form of graphite, which has a natural tendency to coalesce and form large flakes. This is actually accomplished by movement of the graphite, molecule by molecule, through even a solid metal, just as germs might move through the blood stream to form colonies in one or more parts of the body.

"These large graphite flakes, producing planes of weakness in the metal, are responsible for the relative weakness of gray cast iron. The weakening effect is reduced to a minimum by lowering the carbon content as much as practicable and injecting alloying elements—nickel, or nickel with chromium—to break up the existing flakes and to scatter the minute graphite particles throughout the metal. By this combination of effects, a strength nearly double that of ordinary cast iron is attained."

The data on which Mr. Coyle's paper is based was taken from heat records of 50 different foundries. Comparing the strength of cast iron before and after the nickel treatment, Mr. Coyle pointed out that a two-inch bar of the best common gray iron could support a suspended dead weight of 48 tons before breaking, whereas the same size bar of nickel cast iron would require a dead weight of 80 tons to break it. A three-inch diameter bar of this high test nickel cast iron is so strong that it would not break if the locomotive which draws the Twentieth Century Limited were suspended from it.

COST SECTION

Obituary

Alvah Crocker

FITCHBURG, Mass., February 25, 1931.—Word was received here tonight of the sudden death at Lake Wales, Fla., of Alvah Crocker, head of the Crocker, Burbank Company, paper manufacturers, of this city. Mr. Crocker was in his 72nd year.

He was born in Fitchburg, the son of Mr. and Mrs. Charles T. Crocker and lived in this city practically all his life, taking a prominent part in civic affairs. In 1912 he presented to the school children of Fitchburg the Crocker Athletic Field, costing about $500,000.

The field was dedicated to the memory of his grandfather, Alvah Crocker. In addition he gave $100,000 as a trust fund for the permanent maintenance of the field which is one of the finest recreation centers in the east. It is located between Circle, Broad and River streets, near the business section of Fitchburg.

The Crocker, Burbank Company, the largest industry in the city, was founded by his grandfather, the late Alvah Crocker, and he conducted the company for many years. He was one of the founders of the employee bonus plan. He was the first paper mill owner to give to his workers, in the form of a bonus, a portion of the yearly profits. The first payment was made in 1920 and since that time many other paper companies have followed the plan.

He was one of the outstanding members and financial contributors to Christ Episcopal Church of this city. He gave Crocker Chapel two years ago when the church was remodeled, in memory of his father, the late Charles Crocker. The chapel, which is an addition to the main building, cost $50,000. He was a senior warden of the church for many years.

He was a director of the First National Bank, Boston; a director of the Old Colony Bank, Boston, and a past president of the Fay Club, a member of the Oak Hill Country Club, both of Fitchburg; the Union Club of Boston, and a director of the Keith Paper Company, Boston.

He was graduated from Harvard University in 1879, where he captained the varsity crew. While Mr. Crocker took an active part in politics in the city and state he never sought public office. He was a staunch Republican.

He is survived by his widow, Mrs. Charlotte (Bartow) Crocker; two sons, the Rev. John Crocker, of Cambridge and Douglas Crocker, of Fitchburg; three brothers, Charles T. and Kendall Crocker, of Fitchburg, and the Rev. William T. Crocker, of New York City; a sister, Mrs. Amelia Smith, of Cambridge; a half-sister, Mrs. Prentis Sanger, of New York City; a half brother, Bartow Crocker, Fitchburg; a step-mother, Mrs. Charles T. Crocker, of this city, and twelve grandchildren.

Another son, Alvah Crocker, Jr., was killed in the World War.

Henry M. Wheelwright

BOSTON, Mass., February 28, 1931.—Henry May Wheelwright, long a paper manufacturer, vice president and director of the George W. Wheelwright Paper Company, is dead. He was a graduate of Harvard, class of 1894, and his home was at 205 Dudley road, Newton Center, though during the past winter he had been in Fitchburg.

Mr. Wheelwright was born in Roxburg May 25, 1871, the son of George William and Maria Louisa (Bond) Wheelwright. He prepared for Harvard at the Roxburg Latin School, and in September following his graduation from college he started as a mill hand and worked in various capacities until January, 1896, when he became agent for the Hardwick Mill of the Wheelwright Paper Company.

In November, 1898, Mr. Wheelwright went over to England where for six months he made a close study of paper manufacturing methods over there. Returning to this country he again became agent for the Hardwick Mill at Wheelwright, and in 1917 he removed his headquarters to Boston where the Wheelwright offices for some time were located at 67 Milk street.

Mr. Wheelwright belonged to the Union Club, the Hoosic-Whisick Club at Ponkapoag, and the Harvard Club of New York. On December 1, 1904, Mr. Wheelwright married Mildred Winthrop Emmons of New York. She survives him, as do three children, Henry M. Wheelwright, Jr., and Warren Lombard Wheelwright, both of whom are at college at Ann Arbor, Mich.; and Miss Ruth Emmons Wheelwright.

James J. Hinde

SANDUSKY, Ohio, February 28, 1931.—James J. Hinde, who more than a generation ago was head of a concern manufacturing the Sandusky automobile, died of pneumonia at his home here February 23. He was 76 years old.

When Henry Ford had the producing of his own car in mind he is said to have wanted to join Mr. Hinde, but as both lacked capital they never became partners. Before the Sandusky car passed out of existence Mr. Ford is said to have made many trips to see Mr. Hinde and eventually completed his own car.

Mr. Hinde and the late J. J. Dauch founded the Hinde & Dauch Company, said to be today the largest fiber packer concern in the world.

Louis M. Brown

[FROM OUR REGULAR CORRESPONDENT]

GLENS FALLS, N. Y., February 28, 1931.—Following an illness of several years, Louis M. Brown, prominent in paper manufacturing circles, died at his home in this city early this week. He was born in this city in 1860 where he received his early education. Later on he graduated from Harvard prior to becoming identified with the industrial life of the city. At the time of his death he was president of the Imperial Paper Company, a director of Finch, Pruyn & Co., and prominently identified with the leading financial institutions of the city.

He was also actively interested in charitable institutions as a director of the Glens Falls City Hospital and an executive in the Community Chest. Since 1890 he had been a director of the Glens Falls Insurance Company and some time ago succeeded his father as head of the organization. For many years he played a prominent part in civic affairs and anything that promoted the welfare of the city. He was a candidate for county judge on several occasions although never elected. He was also a member of the Glens Falls Country Club, the Harvard Club of New York, and the New York State Bar Association.

L. Gyle Wilson

[FROM OUR REGULAR CORRESPONDENT]

FORT EDWARD, N. Y., February 28, 1931.—L. Gyle Wilson, formerly superintendent of the local branch of the International Paper Company, died this month at his home in Glens Falls, following an illness of a few weeks. He was 54 years old and a native of this village. His connections with the paper industry dated back to 1895, when he became prominently identified with a news print manufacturing concern at Mount Vernon. Later on he came to this village to take over the reigns of the local plant and from here he went to South Glens Falls in 1910 to take over the management of the International mill. From 1925 to 1927 he served as general manager of both the Fort Edward and South Glens Falls plants, resigning a short time later to embark in business himself. He was a prominent member of the Glens Falls Elks, a member of the Glens Falls Country Club, and a former director of the Board of Education in that city.

Consider This New Eastwood Seam With Big Open Suction Area

WHAT would a strong light show if you put it under the seam used on all Eastwood "Perfection" Fourdrinier Wires?

This is what you'll find:—The Eastwood seam has very nearly the same suction area as the body of the wire. As you know, that makes for better operation when running on the Fourdrinier machine.

Compare the Eastwood seam shown above with the old fashioned seams. Its superiority as to open suction area and simplicity is at once apparent.

This seam is now standard on all our Fourdrinier wires, from those for 10 lb. tissue up to high speed newsprint.

EASTWOOD CORPORATION
Established 1877, Belleville, N. J.
"American Paper Made on American Wires"

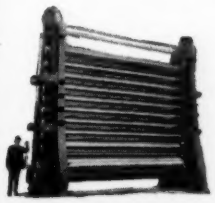
EASTWOOD
"Perfection" WIRES
"Perfection" VALVES

FARREL-BIRMINGHAM COMPANY INC.
50 STATE ST., ANSONIA, CONN.

CALENDERS: Board
CALENDERS: Paper
CALIPERS: Roll
GRINDING MACHINES: Roll
PRESSES: Hydraulic
Calender Roll Recovering
Pulp Dehydrating
ROLLS: Chilled Iron, Dry Sand, Gray Iron, Alloy Iron, Steel
For: Calender Stacks
Board Calenders
Super-Calenders
Glassine Calenders
Friction Rolls
Breaker Rolls
Smoothing Rolls
Creping Rolls
Plater Rolls
Cutting Machines
Paraffining and Waxing Machines
Saturating Machines
Silicating Machines
Miscellaneous Special Purposes

TRANSMISSION MACHINERY:
Gears, Cut: Spur, Single and Double Helical (Farrel-Sykes Continuous Tooth Type)
Speed Reduction Units (Farrel-Sykes)

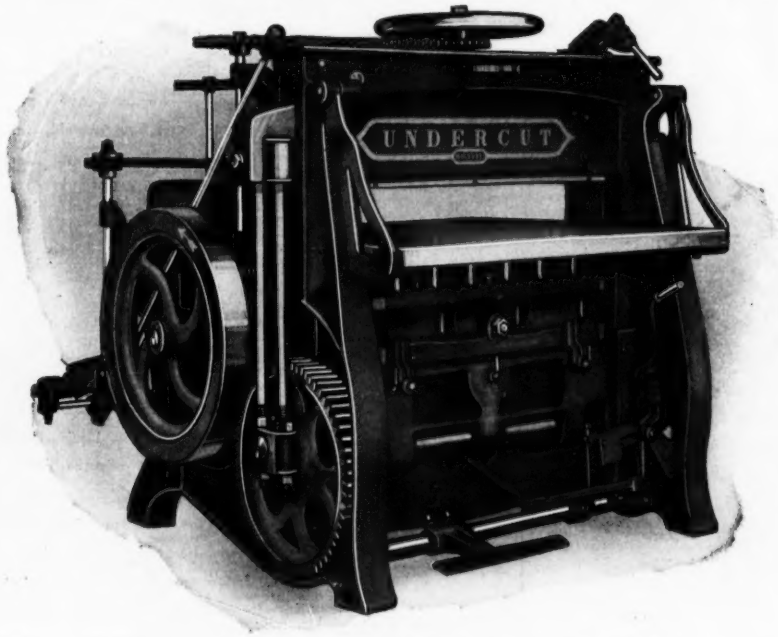
See PAPER AND PULP MILL CATALOG or LOCKWOOD'S DIRECTORY — 1931



Farrel Chilled Iron Rolls combine maximum strength with notable hardness, flawlessness of surface and extreme accuracy. Paper Finishing Calender Stacks in all sizes up to 298" face, equipped with electric, hydraulic or ratchet lift, all operated from the floor. Other uses listed above.

NEW RECORDS FOR PRODUCTION AND PRECISION ARE MADE ON FARREL-BIRMINGHAM MACHINES

THE UNDERCUT PAPER MILL TRIMMER



One of our high efficiency products universally adopted by leading paper mills.

For over a century we have been building
Paper Mill Machinery

Fourdrinier and Cylinder Machines, Jordan Engines, Pumps, Paper Bag Machinery, Paper Mill Trimmers, Etc.

THE SMITH & WINCHESTER MFG. CO., South Windham, Conn.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING FEBRUARY 28, 1931

SUMMARY

Wall paper	202 bls., 81 cs.
Paper hangings	12 bls., 4 cs.
Painted paper	1 cs.
News print	2892 rolls, 129 bls.
Printing paper	115 rolls, 118 bls., 13 cs.
Wrapping paper	21 cs.
Packing paper	1 bl., 15 cs.
Filter paper	36 cs.
Drawing paper	57 cs.
Tissue paper	4 cs.
Colored paper	49 cs.
Metal coated paper	32 cs.
Coated paper	37 cs.
Baryta coated paper	51 cs.
Photo paper	8 cs.
Decalcomania paper	14 cs.
Transfer paper	1 cs.
Writing paper	12 cs.
Envelopes	16 cs.
Stencil paper	19 cs.
Blotting paper	1 cs.
Card board	17 bls., 14 rolls
Paste board	9 cs.
Miscellaneous paper	29 bls., 187 cs.

WALL PAPER

Globe Shipping Co., St. Louis, Hamburg, 4 bls.
Irving Trust Co., St. Louis, Hamburg, 10 cs.
D. C. Andrews & Co., St. Louis, Hamburg, 2 bls.
F. A. Binder, St. Louis, Hamburg, 10 bls.
Bendix Paper Co., St. Louis, Hamburg, 5 cs.
F. J. Emmerich, Baltic, Liverpool, 3 bls.
F. J. Emmerich, American Merchant, Hamburg, 141 bls.
New York Trust Co., Aquitania, Southampton, 1 cs.
R. F. Downing & Co., Aquitania, Southampton, 5 cs.
F. J. Emmerich, Ascania, Southampton, 1 bl.
——, Liverpool Maru, Hamburg, 6 bls., 4 cs.
Guaranty Trust Co., Deutschland, Hamburg, 56 cs.
F. J. Emmerich, Deutschland, Hamburg, 33 bls.
F. A. Binder, Deutschland, Hamburg, 2 bls.

PAPER HANGINGS

Schmidt & Pritchard, Ile de France, Havre, 2 cs.
Whiting & Patterson Co., Inc., Aquitania, Southampton, 1 cs.
W. H. S. Lloyd & Co., Ascania, Southampton, 1 cs., 12 bls.

PAINTED PAPER

Hudson Forwarding Co., Ile de France, Havre, 1 cs.

NEWS PRINT

Perkins Goodwin & Co., St. Louis, Hamburg, 675 rolls.
——, St. Louis, Hamburg, 33 rolls.
Jay Madden Corp., Dresden, Bremen, 290 rolls.
Parsons & Whittemore, Inc., Hallaren, Stockholm, 25 rolls.
Parsons & Whittemore, Inc., American Merchant, Hamburg, 211 rolls.
Jay Madden Corp., Pr. Roosevelt, Hamburg, 97 rolls.
——, Pr. Roosevelt, Hamburg, 307 rolls.
Perkins Goodwin & Co., Deutschland, Hamburg, 243 rolls.
——, Deutschland, Hamburg, 294 rolls.
Baldwin Paper Co., Deutschland, Hamburg, 381 rolls.
——, Larviksfjord, Oslo, 256 rolls, 129 bls.
——, United States, Oslo, 80 rolls.

PRINTING PAPER

J. Henschel Co., St. Louis, Hamburg, 9 cs.
——, St. Louis, Hamburg, 63 bls., 69 rolls.
Hoboken Trust Co., American Merchant, Hamburg, 4 cs.
Keuffel & Esser Co., Pr. Roosevelt, Hamburg, 46 rolls.
Perkins Goodwin & Co., Deutschland, Hamburg, 55 bls.

WRAPPING PAPER

C. Steiner, Deutschland, Hamburg, 21 cs.

PACKING PAPER

R. Hudnut, Ile de France, Havre, 4 cs.
Atlantic F'd'g. Co., Deutschland, Hamburg, 11 cs.
J. P. Heffernan Paper Co., Deutschland, Hamburg, 1 bl.

FILTER PAPER

A. Giese & Son, St. Louis, Hamburg, 20 cs.
H. Reeve Angel & Co., Inc., Ascania, Southampton, 11 cs.
——, Augvald, Marseilles, 5 cs.

DRAWING PAPER

Devoe & Reynolds Co., American Shipper, London, 1 cs.
Keuffel & Esser Co., Pr. Roosevelt, Hamburg, 56 cs.

TISSUE PAPER

F. C. Strype, St. Louis, Hamburg, 4 cs.

COLORED PAPER

J. J. Shore, Co., Deutschland, Hamburg, 17 cs.
——, Deutschland, Hamburg, 8 cs.
——, Pr. Roosevelt, Hamburg, 24 cs.

METAL COATED PAPER

K. Pauli Corp., St. Louis, Hamburg, 32 cs.

COATED PAPER

Bank of America, Natl. Assn., St. Louis, Hamburg, 25 cs.
W. A. Foster & Co., Mississippi, London, 3 cs.
W. A. Foster & Co., Aquitania, Southampton, 5 cs.
Bank of America Natl. Assn., Deutschland, Hamburg, 4 cs.

BARYTA COATED PAPER

Globe Shipping Co., Dresden, Bremen, 51 cs.

PHOTO PAPER

J. H. Schroeder Banking Corp., Bremen, Bremen, 8 cs.

DECALCOMANIA PAPER

L. A. Consmiller, Bremen, Bremen, 8 cs.
C. W. Sellers, Bremen, Bremen, 3 cs.
C. W. Sellers, Deutschland, Hamburg, 3 cs.

TRANSFER PAPER

Fuchs & Lang Manfg. Co., Bremen, Bremen, 1 cs.

WRITING PAPER

American Express Co, Dresden, Bremen, 1 cs.
Marshall Field & Co., Ile de France, Havre, 5 cs.
Coenca Morrison Co., Ile de France, Havre, 5.

ENVELOPES

Simfred Co., St. Louis, Hamburg, 12 cs.
J. Beckhard Co, Bremen, Bremen, 4 cs.

STENCIL PAPER

Arlac Dry Stencil Co., St. Louis, Hamburg, 17 cs.
Bush Service Corp., Deutschland, Hamburg, 2 cs.

BLOTTING PAPER

Shannon Joyce Co., Liberty, Havre, 1 cs.

CARD BOARD

R. Wilson Paper Corp., Wytheville, Rotterdam, 17 bls, 14 rolls.

PASTE BOARD

F. J. Schleicher Paper Box Co., St. Louis, Hamburg, 9 cs.

MISCELLANEOUS PAPER

Eugene Smith, St. Louis, Hamburg, 14 bls.
Rohner Gehrig Co., St. Louis, Hamburg, 2 cs.
——, Dresden, Bremen, 7 cs.
Keller Dorian Paper Co., Ile de France, Havre, 12 cs.
P. Puttman, Ile de France, Havre, 3 cs.
Standard Products Corp., Ile de France, Havre, 130 cs.
Coenca Morrison Co., Ile de France, Havre, 3 cs.
D C. Andrews & Co., Ile de France, Havre, 6 cs.
——, Ile de France, 15 cs.
F. B. Vandegrift & Co., American Merchant, Hamburg, 1 cs.
Heemsoth Basse & Co., Wytheville, Rotterdam, 8 cs.
Walker Goulard Plehn Co., Deutschland, Hamburg, 15 bls.

RAGS, BAGGINGS, ETC

Banco Com'l Italiane Trust Co., Exarch, Genoa, 127 bls. bagging.
Baltic Shipping Co., Dresden, Bremen, 25 bls. rags
International Accep. Bank, Dresden, Bremen, 204 bls rags.
The Barrett Co., Lehigh, Leith, 189 bls. rags.
——, Baltic Liverpool, 54 bls. rags.
E. Mayer, American Merchant, Hamburg, 84 bls. rags.
F. Stern, American Merchant, Hamburg, 102 bls. rags.
Chase National Bank, American Merchant, Hamburg, 34 bls. rags.
W. Steck & Co., American Merchant, Hamburg, 84 bls cotton waste.
Amtorg Trading Co., F. B. Goulandris, Odessa, 2950 bls. rags.
F. Stern, Pr. Roosevelt, Hamburg, 82 bls. rags.
New York Trust Co., St. Louis, Hamburg, 85 bls cotton nappers.
E. J. Keller Co., Inc, Artigas, ——, 66 bls. bagging.

OLD ROPE

International Purchasing Co., Exarch, Genoa, 163 coils.
W. Steck & Co., American Merchant, Hamburg, 42 coils, 109 bls.
International Trust Co., Augvald, Barcelona, 39 coils.
Irving Trust Co, Deutschland, Hamburg, 39 coils.

WOOD PULP

Atterbury Bros., Inc., Larviksfjord, Tofte, 1500 bls. sulphite
E. M. Sergeant & Co, Larviksfjord, Eydehavn, 150 bls. wood pulp.
J. Anderson & Co., Larviksfjord, Oslo, 2785 bls. sulphite
Johaneson Wales & Sparre, Inc., United States, Oslo, 200 bls. sulphate, 40 tons.
M. Gottesman & Co., Inc, Spar, Iggesund, 3350 bls. sulphite, 670 tons.
Bulkley Dunton & Co., Spar, ——, 6250 bls. wood pulp, 1250 tons.
——, Spar, Hernosand, 2700 bls. sulphate, 450 tons.
——, Spar, Hernosand, 12900 bls. sulphite, 2150 tons.
Guaranty Trust Co., St. Louis, Hamburg, 457 bls. wood pulp, 92 tons.
Irving Trust Co., Dresden, Bremen, 175 bls. wood pulp.
Lagerloef Trading Co., Hallaren, Hango, 560 bls. sulphate.
M. Gottesman & Co., Inc., Wytheville, Rotterdam, 525 bls. sulphite, 52 tons
Brown Bros. Harriman & Co., Liverpool Maru, Hamburg, 204 bls. sulphite, 30 tons.
Castle & Overton, Inc., Deutschland, Hamburg, 825 bls. wood pulp, 135 tons.
Russell McCandless, Carlsholm, Stockholm, 150 bls. unbleached sulphite

WOOD PULP BOARDS

Lagerloef Trading Co., Hallaren, Helsingfors, 69 bls.

(Continued on page 72)

THE DRAPER FELTS

All kinds and styles of Felts for all kinds and styles of Papers.

Write us about your Felt problems and let us help you reduce your Felt Costs—we will call anywhere at any time.

DRAPER BROS. COMPANY

CANTON, MASS.

Woolen manufacturers since 1856

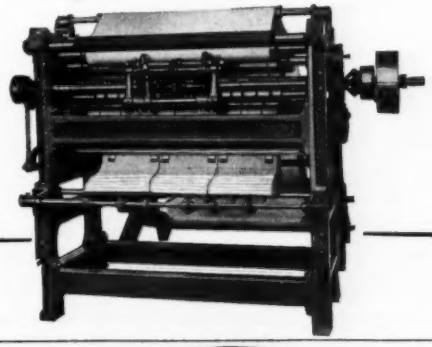
TOWELS

This machine, newly developed, produces 2½ times the number of towels produced on any machine now being sold on the market.

Slit, cut, interfolded—
2½ times faster!
25 cases per hour—
on Full Rotary Towel Interfolder;

Write for details of the fastest machine on the market.

PAPER CONVERTING MACHINE CO.
GREEN BAY, WISCONSIN

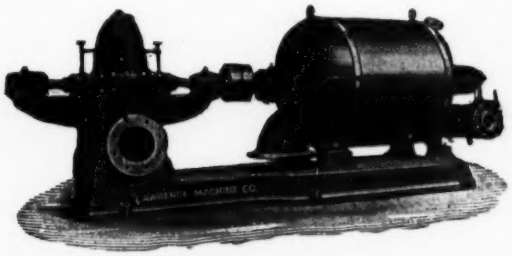


Horizontally Split Casing Double Suction Pumps

LAWRENCE PUMPS

The name protects and guarantees you satisfaction.

We are the original designers and builders of the LAWRENCE PUMP.



Lawrence pumps for all conditions and services. Forty-four years of practical experience with centrifugal pump development places us among the leaders. Our efforts have been rewarded by the acceptance of our product in general.

Thousands of installations and the successful performance of our pumps should be sufficient proof of our ability to handle your pumping problems. Our engineering force is at your command.

Have only Lawrence Pumps, manufactured by the

Lawrence Machine & Pump Company
361 Market St. Lawrence, Mass.

AMIJEL

AMIJEL is not an ordinary beater starch. It is a specially processed pure gelatinized starch, free from knots and lumps.

The absence of colloidal particles gives your sheet a clear finish and because of Amijel's great adhesive qualities it also increases the tensile strength of the paper.

Amijel does not have to be cooked, just add cold water and mix.

CORN PRODUCTS REFINING COMPANY
17 Battery Place, New York City

Imports of Paper and Paper Stock

(Continued from page 70)

PHILADELPHIA IMPORTS

WEEK ENDING FEBRUARY 28, 1931

International Trust Co., Exarch, Marseilles, 46 rolls old rope.

Baring Bros. & Co., Lehigh, Leith, 15 bls. rags.

——, Lehigh, Dundee, 13 bls. paper stock.

J. M. Hagy Waste Works, Liberty, Dunkirk, 25 bls. rags.

Standard Waste Manfg. Co., Liberty, Dunkirk, 30 bls. rags.

Union Waste Co., Liberty, Dunkirk, 25 bls. rags.

O'Neil Bros., Liberty, Dunkirk, 23 bls. rags.

Katzenstein & Keene, Inc., Liberty, Dunkirk, 127 bls. rags.

Castle & Overton, Inc., Liberty, Havre, 30 bls. rags.

S. Birkenstein & Sons, Augvald, Valencia, 82 bls. rags.

S. Birkenstein & Sons, Augvald, Marseilles, 95 coils old rope.

Tradesmans National Bank, Augvald, Barcelona, 134 bls. rags.

E. J. Keller Co., Inc., London Citizen, ——, 103 bls. rope.

E. J. Kellar Co. Inc., West Arrow, ——, 151 bls. rags.

BALTIMORE IMPORTS

WEEK ENDING FEBRUARY 28, 1931

Bulkley Dunton & Co., Malmen, ——, 3500 bls. wood pulp.

Bulkley Dunton & Co., West Harcuvar, ——, 2600 bls. wood pulp.

Bulkley Dunton & Co., Carlsholm, ——, 1500 bls. wood pulp.

Bulkley Dunton & Co., Roxen, ——, 17500 bls. wood pulp.

——, Exarch, Alexandria, 4 bls. rags.

PORTLAND IMPORTS

WEEK ENDING FEBRUARY 28, 1931

Bulkley Dunton & Co., Hallaren, ——, 3500 bls. wood pulp.

Lagerloef Trading Co., Hallaren, Helsingfors, 2513 bls. sulphate; 5967 bls. sulphite.

Lagerloef Trading Co., Hallaren, Hango, 2938 bls. sulphate; 3086 bls. sulphite.

BOSTON IMPORTS

WEEK ENDING FEBRUARY 28, 1931

Brown Bros. Harriman & Co., Mississippi, London, 108 coils old rope

E. Butterworth & Co., Inc., Mississippi, London, 62 bls., 44 bags waste paper.

Eastman Kodak Co., Mississippi, London, 1 cs. photo-paper

1st National Bank of Boston, Mississippi, London, 11 bls. rags.

National Shawmut Bank, Mississippi, London, 37 bls. rags.

Crocker Burbank Co., Mississippi, London, 39 bls. waste paper.

E. Butterworth & Co., Inc., Lehigh, Dundee, 46 bls. paper stock.

G. F. Malcolm Co., Baltic, Liverpool, 30 cs. tissue paper.

F. S. Webster, Baltic, Liverpool, 2 cs. tissue paper.

Campbell Ward Co., Baltic, Liverpool, 17 bls. thread waste.

Lagerloef Trading Co., Hallaren, Helsingfors, 1966 bls. sulphate; 2535 bls. sulphite.

Lagerloef Trading Co., Hallaren, Hango, 1023 bls. sulphate; 520 bls. sulphite.

Bulkley Dunton & Co., Carlsholm, ——, 3500 bls. wood pulp.

Bulkley Dunton & Co., Spar, ——, 2000 bls. wood pulp.

Bulkley Dunton & Co., Elmshorn, ——, 2500 bls. wood pulp.

Norwegian Research Laboratory Opened

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 4, 1931—The Technical Association of the Norwegian paper industry has recently opened its new research laboratory at Skoyan, a suburb of Oslo according to Commercial Attache Lund at Oslo.

The laboratory occupies two floors of quite a large building and is equipped with the latest apparatus for testing paper and pulp, as well as research work. A large library and conference room has also been added. This laboratory is the outgrowth of efforts which were begun ten years ago by a few members of the industry and culminated in the establishment of the laboratory on a small scale at Embrattsfoss, in connection with a Norwegian paper and pulp mill. The experimental cooking equipment remains at Embrattsfoss, but all other activities have been transferred to Skoyan.

Cellophane Prices Reduced

The Du Pont Cellophane Company has announced another reduction in the price of Cellophane.

This makes the twelfth reduction since domestic manufacture was begun in 1924, and the price of regular Cellophane is now one-fifth its cost at that time.

In commenting on this announcement, Du Pont Cellophane officials stated, "It is in line with the company's policy to reduce prices whenever increased demand for Cellophane makes this possible.

"The recent greatly increased use of moistureproof Cellophane, an exclusive patented product, in new and wider fields makes it possible to reduce it even more than regular Cellophane."

Unique Booklet On Greaseproof Parchment

The Rhinelander Paper Company, of Rhinelander, Wis., have published a limited edition of an elaborate and beautifully printed booklet describing Rhinelander Greaseproof parchment in a comprehensive manner. The booklet informs the reader of what makes greaseproof paper grease-proof and many other facts. It gives this information in a clear cut consise style, free from hyper-technical terms, and will undoubtedly prove a valuable addition to any technical library. The booklet also contains many printed specimens of greaseproof papers.

Aimmer Paper Products Co. Formed

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., March 2, 1931—One of the newest specialty manufacturers in Indianapolis is the Aimmer Paper Products Company, located at Nineteenth street and Martindale avenue. The firm specializes in the manufacture and waxing of bread wrapping paper. Karl R. Zimmer is president of the company which for the time being will devote most of its sales attention to developing Indiana as a sales outlet. The plant is described as being the first and only one of its kind in Indiana. Zimmer formerly was associated with a waxed paper company at Otsego, Mich.

At present the company occupies about 10,000 square feet of space. A high-grade, bleached, woodpulp, sulphite paper is used. The plant has an initial capacity of two cars a day.

New Eddy Plant Planned

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., March 2, 1931—A $1,000,000 extension program, involving the construction of a paper mill, is to be undertaken by the E. B. Eddy Company, Ltd., at Hull, and it is stated that a beginning on this program will be made next month with work on a $300,000 filtration plant. The Eddy company has a wide variety of products, including sulphite bonds, writing, litho, book, news print, poster, bag, cover, manila, wrapping tissue, toilet tissue, lined folding boards, wood pulp boards sheathing and paper toweling. The total capacity for paper products is 212 tons per day. It also has large ground wood and sulphite pulp mills.

Pioneers In Paper

A wealth of interesting material is contained in an attractively bound and beautifully printed book entitled "Pioneers In Paper," the story of Blake, Moffitt & Towne, of San Francisco, Cal., published in commemoration of the organization's seventy-fifty anniversary.

The book gives much valuable information regarding early printing on the Pacific Coast, in addition to a comprehensive history of this well-known paper house. Many illustrations are included in this unique work, all of which are of absorbing interest.

The B Q Inc.

QUALITY PULPS

"HAFSLUND BEAR"
Bleached Sulphite

"FORSHAGA"
Bleached Sulphite

"HURUM SPECIAL"
Extra Strong Kraft

KÓOS BAC
"BAMBLE"
Extra Strong Kraft

Fresh Monthly Shipments—No Closed Winter Season

The Borregaard Company
Incorporated
200 FIFTH AVENUE NEW YORK, N. Y.

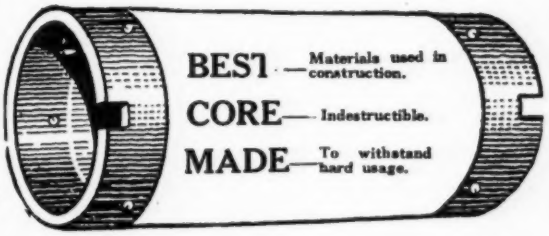
SHIPPING INSURANCE

The Use of

ELIXMAN CORES

protects your rolls and insures their delivery to your customer in perfect condition. They eliminate claims for damages.

SHIPPING INSURANCE



Your two sources of supply are

Canadian Elixman Company
HAMILTON, ONTARIO

Elixman Paper Core Company
CORINTH, N. Y.

WOOD PULP AGENTS

PRICE & PIERCE, Ltd.,

17 EAST 42ND ST.
NEW YORK

West Virginia Pulp and Paper Company

Manufacturers of

SUPERCALENDERED
and
MACHINE FINISHED BOOK
and LITHOGRAPHIC
PAPERS

Offset, Envelope, Bond, Writing, Cover and Music Paper, High Grade Coated Book, Index Bristol, Post Card, Kraft and Label Papers.

also

Bleached Spruce Sulphite and Soda, Kraft Pulp

280 Park Ave. New York
35 East Wacker Drive Chicago
503 Market St., San Francisco, Cal.
Sixth and Chestnut Sts., Philadelphia, Pa.

New York Market Review

Office of the PAPER TRADE JOURNAL.
Wednesday, March 4, 1931.

Business in the local paper market was moderately active during the past week. While most of the standard grades of paper were in seasonal request, some sections of the industry were rather quiet. Now that the Spring campaign is under way, more lively trading is anticipated in the near future. Prices are generally holding to previously quoted levels.

Conditions in the news print industry are practically unchanged. According to information gathered by the News Print Service Bureau, the total weighted average production in the United States and Canada during the past week was 59 per cent of capacity. Shipments proceeded at approximately 56 per cent of rating. The price situation continues unsatisfactory.

There is a better feeling in the paper board market. Demand for the various grades is fairly persistent and prices are somewhat steadier. The fine paper market is exhibiting a strong undertone. Tissues are moving in fairly satisfactory volume. The coarse paper market was rather quiet but demand for wrapping paper should expand with the approach of the Easter season.

Mechanical Pulp

Steadiness prevails in the ground wood market. Offerings of both domestic and imported mechanical pulp are not excessive, due to curtailment of production both in this country and abroad. There are a fair number of inquiries around for future needs. Pries are holding to schedule, in most instances, and there is little talk of concessions around at present.

Chemical Pulp

The chemical pulp market is showing some signs of improvement. Demand for several grades of both foreign and domestic varieties is fairly persistent. While supplies are moving into consumption at a normal pace, offerings are about sufficient to take care of surrent requirements. The recenfly revised quotations are being maintained, in most instances.

Old Rope and Bagging

Demand for old rope was rather light during the past week. Offerings of old manila rope, however, are limited, and prices are generally steady and unchanged. Small mixed rope is going forward in fair volume The bagging market is fairly active. Gunny and roofing grades are in excellent request, although scrap bagging is quiet. No radical price changes were reported.

Rags

The domestic rag market is displaying a somewhat similar trend than of late. More interest is being shown in cotton cuttings. Roofing grades are gradually becoming firmer. Mixed grades are moderately active. In most instances, prices are holding to previously quoted levels. The better feeling also extends to the imported rag market, which is slightly more active.

Waste Paper

Some improvement was noticed in the paper stock market, which is reported to be in a better position statistically than for some time past. The better grades are steadier, especially hard and white soft shavings. Board mills are showing more interest in the lower grades, offerings of which are said to be limited at the present time. Prices rule steadier on most grades.

Twine

Seasonal conditions prevail in the local twine market. Demand for the various grades is fairly satisfactory. Severe competition for desirable orders, however, has resulted in some shading and prices, in some instances, are slightly easier. However, the position of the industry should improve in the near future.

Boston Paper Trade Happenings

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., March 2, 1931—The Arnold-Roberts Company is putting out a new and unusual line of book paper, Agecroft Text, made by the Standard Paper Manufacturing Company, Richmond, Va. The paper, whose appearance changes with the light, has a rich mellow texture. Lifting it up certically shows color tones unseen before. The sample book, with the ivory, opal and white in which the paper is made, contains dummy suggestions for some of its uses.

The Neenah Paper Company, Neenah, Wis., is sending Carter Rice & Co. Corp. a portfolio of Chieftain Bond, containing letter head specimens to be distributed among New England printers. There are 16 attractive shades which allow considerable latitude in creating a variety of letter heads with a color appeal.

James C. Campbell, formerly of the Andrews Paper Company, is one of the incorporators of the Industrial Paper and Cordage Company, Pawtucket, R. I. The other incorporators are Charles K. Shaw and Henry C. McDuff. The capital stock is 250 common shares of no par value.

C. W. Harvey, who is associated with the Munro & Church Company, box board dealers and has gone on a winter cruise, arrived at Savannah, Ga., Thursday, accompanied by Mrs. Harvey.

Walter G. Morey, of the Morey Paper Mill Supply Company, is convalescing after an operation at Phillips House, where he has been for three weeks. He is expected to return to the office of his company within a few weeks.

St. Regis Paper Changes

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., March 2, 1931—Application has been made to the Legislature by the St. Regis Paper Company of Canada to have its Quebec charter amended by changing the authorized capital stock of the company from 100,000 shares of no par value common stock to the same number of shares of a par value of $5 each; and further to have a clause inserted to the effect that in the future the authorized common share capital shall be $500,000.

Innovation in News Print Machinery

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., March 2, 1931—According to reports here, Dominion Engineering Works, Ltd., whose plant is at Lachine, Que., has produced an important auxiliary machine for the manufacture of news print which is expected to play an important part in the reduction of the cost of manufacturing news print, as it cuts down the cost of sulphite pulp in a substantial degree.

Cotton and Paper Rolls
Super Calenders
Friction Calenders
Embossing Calenders
Hydraulic Presses and Pumps

Successors to the Granger Foundry & Machine Co.

The Textile-Finishing Machinery Company
PROVIDENCE, R. I.

Sulphur

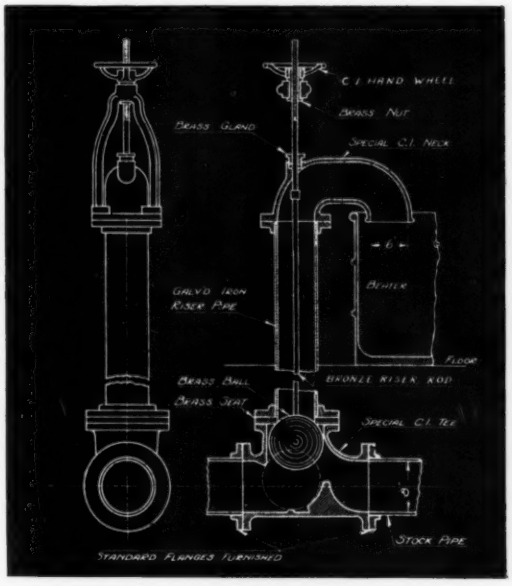
A FIRST REQUISITE

in

Paper Making

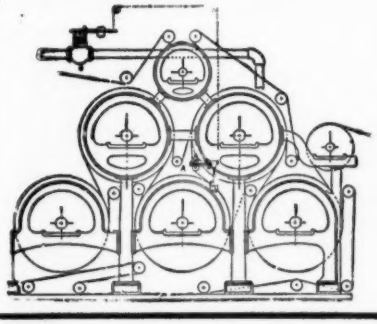
Large Production
Ample Reserves
Prompt Deliveries
Purity 99½%

TEXAS GULF SULPHUR CO
(Incorporated)
75 East 45th Street, New York City
Mine: Gulf, Matagorda County, Texas



BALL VALVE HYDRANT
FOR STOCK CIRCULATING SYSTEM
MANUFACTURED BY
TICONDEROGA MACHINE WORKS
TICONDEROGA, N. Y.
SEND FOR BULLETIN NO. 2

The Pickles Drying Regulator



WE ARE SAFE IN OUR PROPOSITION
YOU'LL MAKE NO MISTAKE IN ACCEPTING IT

Pickles Drying Regulator

will do everything we claim for it and more. The test costs you nothing until you are satisfied. Many mills tried one and now have every machine equipped. Write for list of users and other information.

W. F. PICKLES **Buckland, Conn.**

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL.
Wednesday, March 4, 1931.

BLANC FIXE.—Trading in the blanc fixe market was light during the past week. The contract movement was well up to average. Prices are holding to schedule. The pulp is still quoted at from $42.50 to $45.00 per ton, and the powder at from 3¾ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—The position of the bleaching powder market is practically unchanged. Shipments against contract are going forward in fairly satisfactory volume. Prices are generally holding to previously quoted levels. Bleaching powder is selling at from $2.00 to $2.35 per 100 pounds, in drums, at works.

CASEIN.—Business in the casein market was rather quiet. Prices remain unchanged. Domestic standard ground is quoted at 8½ cents and finely ground at 11½ cents per pound. Argentine standard ground is selling at 10 cents and finely ground at 11 cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—The caustic soda market is moderately active. Contract shipments are moving to the paper mills with regularity. Prices remain unchanged. Solid caustic soda is quoted at from $2.50 to $2.55, while the flake and the ground are selling at from $2.90 to $2.95 per 100 pounds, in large drums, at works.

CHINA CLAY.—Steadiness prevails in the china clay market. The contract movement is about normal for the time of year. Prices are holding to schedule, in most instances. Imported china clay is quoted at from $13 to $21 per ton, while domestic paper making clay is selling at from $8 to $13 per ton, at mine.

CHLORINE.—Some improvement was noticed in the chlorine market. Demand from the paper mills is more persistent and contract shipments are going forward at a steady pace. Prices are unchanged. Chlorine is quoted at $2.50 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—The rosin market fluctuated slightly. The price situation was easier. The grades of gum rosin used in the paper mills are now quoted at from $5.05 to $5.45 per 280 pounds, in barrels, at yards. Wood rosin is still selling at $4.00 per 280 pounds, in car lots, at southern shipping points.

SALT CAKE.—Demand for salt cake continues persistent. Supplies are moving into consumption in good volume. Prices rule steady and unchanged. Salt cake is quoted at from $16 to $17; German salt cake at from $15.50 to $16; and chrome salt cake is selling at from $14 to $15 per ton, in bulk, at works.

SODA ASH.—The soda ash market was rather quiet during the past week. Shipments against contract, however, continue to go forward at a steady pace. Prices remain unchanged. Contract quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1.00; in bags, $1.15; and in barrels, $1.38.

SULPHATE OF ALUMINA.—The sulphate of alumina market is exhibiting a strong undertone. Demand is fairly persistent and prices are holding to formerly quoted levels. Commercial grades are selling at from $1.25 to $1.40; while iron free is offered at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—Conditions in the sulphur market are satisfactory. Prices are unchanged. Sulphur is quoted at $18 per long ton, on orders of 1 ,000 tons, or over, on yearly contracts; and at $20 per ton for any smaller quantity over that period. On spot and near by car loads the quotation is $21 per ton.

TALC.—The talc market is pursuing the even tenor of its way. Demand from the mills is seasonal. Prices are holding to schedule, without difficulty. Domestic talc is quoted at from $16 to $18 per ton, in bulk; while imported talc is selling at from $18 to $22 per ton, in bags, ship side.

Market Quotations

Paper
(F. o. b. Mill)

Ledgers	11.00	@	38.00
Bonds	6.75	@	53.25
Writings—			
Extra Superfine	14.00	@	32.00
Superfine	14.00	@	32.00
Tub sized	10.00	@	15.00
Engine sized	6.75	@	11.00
Book, Cased—			
S. & S. C.	5.50	@	—
M. F.	5.25	@	—
Coated and Enamel	7.00	@	10.50
Lithograph	7.50	@	12.00
Tissues—Per Ream—			
White No. 1	.65	@	.67½
Anti-Tarnish M G only	.65	@	.70
Colored	.70	@	.90
White No. 2	.55	@	.57½
Kraft	.65	@	.70
Manila	.55	@	.57½
Kraft—			
No. 1 Domestic	4.25	@	5.30
No. 2 Domestic	3.00	@	3.75
Southern	3.00	@	3.75
Imported	6.00	@	7.00
Manila—			
No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00
Butchers	3.37½	@	—
Fibre Papers—			
No. 1 Fibre	4.25	@	5.50
No. 2 Fibre	4.00	@	4.75
Common Bogus	1.50	@	3.00
Screenings	2.00	@	3.00
Card Middles	4.00	@	5.00
Glassine—			
Bleached, basis 25 lbs., No. 1	.09¾	@	—
No. 2	.11¼	@	—
Bleached, basis 20 lbs.	.11¾	@	—
(Delivered New York)			
News, per ton—			
Rolls, contract	62.00	@	—
Rolls, spot	62.00	@	—
Sheets	67.00	@	—
Side Runs	47.00	@	52.00
Boards—per ton—			
News	32.50	@	35.00
Straw	40.00	@	45.00
Chip	30.00	@	32.00
Binders' Boards	65.00	@	70.00
Standard 85 Test Liner	35.00	@	40.00
Sgl. Mla. Lt. Chip	42.50	@	—
(F. o. b. Mill)			
Wood Pulp Boards	70.00	@	80.00

Mechanical Pulp
(On Dock)

No. 1 Imported—			
Moist	28.00	@	32.00
Dry	30.00	@	34.00
(F. o. b. Mill)			
No. 1 Domestic	28.00	@	34.00

Chemical Pulp
(On Dock, Atlantic Ports)

Sulphite (Imported)—			
Bleached	2.80	@	4.25
Easy Bleaching	2.35	@	2.60
No. 1 strong unbleached	2.00	@	2.65
Mitscherlich unbleached	2.10	@	2.70
No. 2 strong unbleached	1.90	@	2.00
No. 1 Kraft	1.40	@	1.75
No. 2 Kraft	1.35	@	1.55
Sulphate—			
Bleached	3.00	@	3.50
(F. o. b. Pulp Mill)			
Sulphite (Domestic)—			
Bleached	2.40	@	4.75
Easy Bleaching Sulphite	2.55	@	2.75
News Sulphite	2.35	@	2.60
Mitscherlich	2.50	@	3.25
Kraft (Domestic)	1.60	@	2.75
(Delivered New York)			
Soda Bleached	3.00	@	—

Domestic Rags
New Rags
(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	8.00	@	8.50
New White, No. 2	7.00	@	7.25
Silesias No. 1	6.00	@	6.50
New Unbleached	8.00	@	8.50
New Blue Prints	5.00	@	5.50
New Soft Blacks	4.00	@	4.50
Blue Overall	6.00	@	6.25
Washables	3.75	@	4.00
Fancy	4.00	@	4.50
Mixed Khaki Cuttings	4.25	@	5.25
Pink Corset Cuttings	6.50	@	7.00
O. D. Khaki Cuttings	5.15	@	5.75
Men's Corduroy	3.00	@	3.50
New Mixed Blacks	3.00	@	3.25
Old Rags			
White, No. 1—			
Repacked	5.25	@	5.75
Miscellaneous	4.25	@	4.75
White, No. 2—			
Repacked	3.00	@	3.50
Miscellaneous	2.30	@	2.50
St. Soiled, White	1.50	@	1.75
Thirds and Blues—			
Repacked	2.25	@	2.50
Miscellaneous	1.65	@	1.85
Black Stockings	3.25	@	3.75
Roofing Rags—			
Cloth Strippings	1.25	@	1.30
No. 1	1.25	@	1.30
No. 2	.90	@	1.00
No. 3	.70	@	.80
No. 4	.65	@	.70
No. 5A	.50	@	.60

Foreign Rags
New Rags

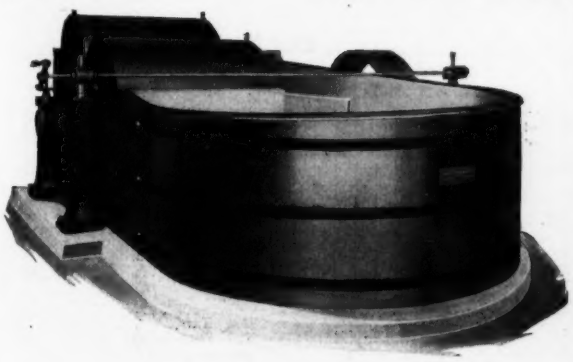
New Dark Cuttings	2.15	@	2.40
New Mixed Cuttings	2.25	@	2.50
New Light Silesias	5.75	@	6.25
Light Flannelettes	6.25	@	6.75
Unbleached Cuttings	7.50	@	8.00
New White Cuttings	7.25	@	7.75
New Light Oxfords	5.75	@	6.25
New Light Prints	4.25	@	4.75
Old Rags			
No. 1 White Linens	7.00	@	7.50
No. 2 White Linens	5.50	@	6.00
No. 3 White Linens	4.00	@	4.50
No. 4 White Linens	2.50	@	3.00
No. 1 White Cotton	5.00	@	5.50
No. 2 White Cotton	4.00	@	4.50
No. 3 White Cotton	2.75	@	3.75
No. 4 White Cotton	1.60	@	1.75
Extra Light Prints	2.50	@	2.75
Ord. Light Prints	2.10	@	2.25
Med. Light Prints	1.65	@	1.75
Dutch Blue Cottons	1.90	@	2.10
French Blue Linens	2.65	@	2.75
German Blue Linens	2.25	@	2.40
German Blue Cottons	1.75	@	1.85
Checks and Blues	1.60	@	1.75
Lindsay Garments	1.10	@	1.20
Dark Cottons	.80	@	.90
Old Shopperies	.75	@	.80
New Shopperies	.75	@	.80
French Blues	1.80	@	1.90

Old Rope and Bagging
(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	1.65	@	1.80
Domestic	1.65	@	1.80
Wool Tares, light	1.30	@	1.40
Wool Tares, heavy	1.35	@	1.40
Bright Bagging	1.30	@	1.35
Small Mixed Rope	.90	@	1.00
Manila Rope—			
Foreign	2.50	@	2.60
Domestic	2.75	@	300
New Burlap Cut	2.25	@	2.50
Hessian Jute Threads—			
Foreign	2,60	@	2.75
Domestic	2.80	@	3.00

Old Waste Papers
(F. o. b. New York)

Shavings—			
Hard, white, No. 1	2.75	@	2.85
Hard White, No. 2	2.30	@	2.40
Soft, white, No. 1	2.50	@	2.60
White envelope cuttings	2.95	@	3.05
Flat Stock—			
Stitchless	.90	@	1.00
Overissue Mag.	.90	@	1.00
Solid Flat Book	.75	@	.85
Crumpled No. 1	.60	@	.70
Solid Book Ledger	1.90	@	2.00
Ledger Stock	.80	@	.90
New B. B. Chips	.20	@	.30
Manilas—			
New Env. Cut	2.00	@	2.20
New Cuttings	1.50		1.65
Extra No. 1 old	1.25	@	1.35
Print	.50	@	.60
Bogus Wrapper	.50	@	.60
Container	.25	@	.30
Old Kraft Machine—			
Compressed bales	1.20	@	1.30
News—			
No. 1 White News	1.70	@	1.80
Strictly Overissue	.40	@	.45
Strictly Folded	.30	@	.35
No. 1 Mixed Paper	.15	@	.20
Common Paper			Nominal



Putting Production into *High Gear*

In scores of paper mills whose annual schedules total millions of tons, Dayton High Speed Beaters are famous for their power, endurance and performance. A heavier furnish—faster beating—less jordaning—less power required—these proven features will put your production in high gear, too. Shown above: Dayton High Speed Beater with cypress tub, 61" dia. by 60" face. Nine of these recently went into a prominent mill, because Dayton specializes on the right beater for the particular task at hand. Years of technical experience—knowledge of paper making—prestige of serving the world's largest mills—these are at your command when you consult this organization.

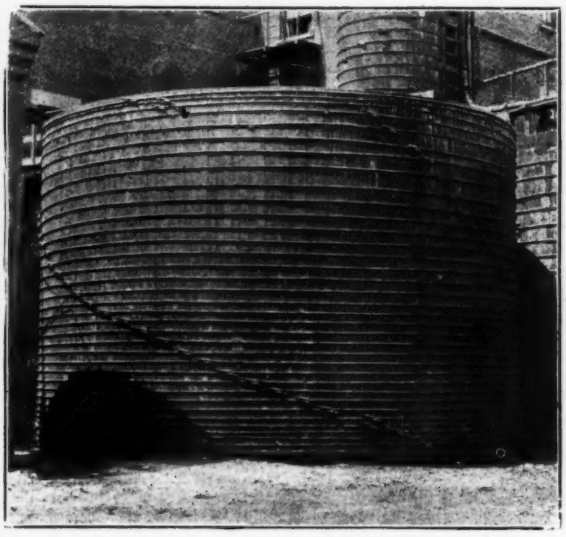
THE DAYTON BEATER & HOIST CO., DAYTON, OHIO

Eastern Representatives
Mansfield, Bolton & Kent
501 Fifth Ave., New York City

Western Representative
F. H. Godfrey
415 Lenora St., Seattle, Wash.

DAYTON
High Speed Beaters

WOOD TANKS TILE



Blow Pit and Vomit Stack at Marathon Paper Company Mill

NO TANK is too large nor none too small for our tank-making equipment and stocks. We cater to the needs of the paper industry. Blow Pits, Vomit Stacks, Stock Tanks, Acid Storage Tanks, Stuff Chests, Agitators, etc. See our Condensed Catalog in Paper and Pulp Mill Catalog. Ask us about our Glazed Tile Tanks.

KALAMAZOO TANK AND SILO CO.
KALAMAZOO, MICHIGAN
Tank Builders Since 1867

EDGAR · CLAYS

AMERICAN MADE
FOR
AMERICAN TRADE

600 TONS DAILY
CAPACITY

H. T. BRAND

COATING CLAY
HIGH GRADE FILLER

KLONDYKE BRAND
FILLERS

Technical service available for coating and loading without charge. Write for samples.

EDGAR BROS. CO.
50 CHURCH ST. NEW YORK

Twines
(F. o. b. Mill)

Cotton—			
B. C., 18 basis	.32	@	.34
No. 1	.22	@	.24
No. 2	.21	@	.22
No. 3	.19	@	.20
A. Italian, 18 basis	.38	@	.39
Finished Jute—			
Dark 18 basis	.20½	@	.21
Light 18 basis	.22½	@	—
Jute Wrapping, 3-6 Ply—			
No. 1	.14¾	@	—
No. 2	.13¾	@	—
Tube Rope—			
4-ply and larger	.10¼	@	—
Fine Tube Rope—			
4-ply	.12¾	@	—
3-ply	.13¾	@	—
2-ply	.14¾	@	—
Paper Makers Twine			
Balls	.08¾	@	—
Box Twine, 2-3 ply	.09	@	.10
Jute Rope	.11	@	.12
Amer. Hemp, 6	.29	@	.31
Java Sisal			
No. 1 Basis	.12	@	—
No. 2 Basis	.11¾	@	—
New Zealand Sisal	.11½	@	—
Sisal Lath Yarn—			
No. 1	.14	@	.16
No. 2	.12	@	.14
Manila Twine	.22½	@	.24½

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.30	@	.53¾
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine Writing	.18	@	.24
No. 1 Fine Writing	.14	@	.18
No. 2 Fine Writing	.12	@	.14
No. 3 Fine Writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¼	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	5.00	@	5.50
Southern Kraft	3.75	@	4.00
No. 2 Kraft	3.75	@	4.00
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue	.07	@	.07¼
White Tissue	.07¼	@	.07½
(Delivered Central Territory)			
News, per ton—			
Rolls, contract	62.00	@	—
Sheets	67.00	@	—
Boards, per ton—			
Plain Chip	30.00	@	35.00
Solid News	32.50	@	37.50
Manila Lined Chip	40.00	@	45.00
Container Lined—			
85 Test	50.00	@	55.00
100 Test	55.00	@	60.00

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.35	@	2.40
White Env. Cuttings	—	@	—
No. 1 Soft Shavings	2.10	@	2.15
Ledger & Writings	.70	@	.75
Solid Books	.75	@	.80
Blanks	1.60	@	1.65
Krafts	1.25	@	1.35
New Kraft Cuts	1.35	@	1.45
Manila Env. Cuts	1.50	@	1.55
Ex. No. 1 Manila	1.25	@	1.30
Print Manila	.40	@	.45
Overissue News	.40	@	.45
Old Newspapers—			
No. 1	.35	@	.40
No. 2	.30	@	.35
Mixed Papers—			
No. 1	.28	@	.30
No. 2	.20	@	.25
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.05	@	.40
Ledgers	.08	@	.40
Writings—			
Superfine	.12½	@	.18
Extra fine	.18	@	.22
Fine	.17	@	.26
Fine, No. 2	.15	@	.25
Fine, No. 3	.09	@	.20
Book, M. F.	.05	@	.07
Book, S. S. & C.	.05	@	.07½
Book, Coated	.09	@	.16
Coated Lithograph	.07	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.07	@	.09
Manila Sul., No. 1	.03½	@	.05½
Manila No. 2	.03	@	.04
No. 1 Kraft	.05¼	@	.06
No. 2 Kraft	.03¾	@	.04
Southern Kraft No. 1	—	@	.03½
Southern Kraft No. 2	—	@	.03½
Common Bogus	.03	@	.04
(Delivered Philadelphia)			
News Print Rolls	62.00	@	—
Straw Board	52.50	@	70.00
News Board	32.50	@	—
Chip Board	30.00	@	—
Wood Pulp Board	85.00	@	95.00
Binder Boards—			
No. 1, per ton	75.00	@	—
No. 2, per ton	70.00	@	—
Carload lots	68.00	@	70.00
Tarred Felts—			
Regular	55.50	@	57.00
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.09	@	—
New White, No. 2	.07	@	—
Light Silesias	.07	@	—
Silesias, No. 1	.07	@	.09
Black Silesias, soft	.05	@	—
New Unbleached	.08½	@	.09
Washable, No. 1	.04½	@	.05
Blue Overall	.07½	@	.08
Cottons—According to grades—			
Washable, No. 2	.03	@	—
New Blue	.03	@	—
Fancy	.05	@	—
New Black Soft	.05	@	—
New Light Seconds	.02½	@	.03
New Dark Seconds	1.85	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.05	@	.05½
No. 2 Mixed	.04	@	.04½
Corduroy	.03	@	.03½
New Canvas	.08½	@	.09
New Black Mixed	.03	@	.04

Domestic Rags (Old)

White No. 1—			
Repacked	4.20	@	4.35
Miscellaneous	3.25	@	3.50
M. G.	6.00	@	—
Thirds and Blues—			
Miscellaneous	1.60	@	1.80
Repacked	2.00	@	2.25
Black Stockings (Export)	3.80	@	4.00
Roofing Stock—			
Foreign No. 1	1.25	@	1.30
Repacked	.80	@	.90

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.50	@	1.60
Domestic	1.75	@	—
Manila Rope	3.50	@	4.00
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps—			
No. 1	1.50	@	1.60
No. 2	1.10	@	1.20
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.65	@	2.75
No. 2 Hard White	2.30	@	2.50
No. 1 Soft White	2.25	@	2.50
No. 2 Soft White	1.40	@	1.60
No. 1 Mixed	.90	@	1.00
No. 2 Mixed	.60	@	.70
Solid Ledger Stock	1.50	@	1.60
Writing Paper	1.05	@	1.25
No. 1 Books, heavy	1.00	@	1.15
No. 2 Books, light	.90	@	.95
No. 1 New Manila	2.15	@	2.30
No. 1 Old Manila	1.50	@	1.60
Print Manila	.50	@	.60
Container Manila	.45	@	.50
Old Kraft	1.30	@	1.35
Common Paper	.25	@	.35
No. 1 Mixed Paper	.25	@	.30
Straw Board, Chip	.35	@	.40
Binders Board, Chip	.35	@	.45
Corrugated Board	.50	@	.60
Overissue News	.40	@	.45
Old Newspaper	.25	@	.30

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.12½
Rag Content	.15	@	.30
All Rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.04¼	@	.05½
No. 2 Kraft	.03¾	@	.05
(Less car-freight to Boston)			
Southern Kraft	—	@	3.35
(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.)			
Common Bogus	.02	@	.02¾
Delivered New England points			
News Print, rolls	61.50	@	—
Straw Board, rolls	.009	—	@52.50
Straw Board in Sheets, basis 35s to 70s	—	@	50.00
Filled News Board	32.50	@	—
Chip Board	30.00	@	—
Chip Board (Creasing)	32.50	@	—
Single Manila Lined Chip	45.00	@	—
Single White, Patent Coated News Board Bender, No. 1	60.00	@	75.00
Single White, Patent Coated News Board Bender, No. 2	55.00	@	65.00
Wood Pulp Board	75.00	@	80.00
Binder Boards	67.50	@	75.00

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	—	@	2.40
No. 1 Mixed	.90	@	1.00
No. 2 Mixed	.60	@	.65
Solid Ledger Stock	—	@	1.75
No. 1 Books, heavy	.75	@	.80
No. 1 Books, light	—	@	.65
Crumpled Stitchless Book Stock	—	@	.70
Manila Env. Cuttings	1.85	@	2.00
No. 1 Old Manila	—	@	1.00
White Blank News	1.50	@	1.60
Kraft No. 1	1.00	@	1.10
Manila	.80	@	.90
No. 1 Mixed Paper	—	@	.16
Overissue News	—	@	.40
Old Newspapers	.25	@	.30
Box Board, Chip	.16	@	.20
Corrugated Boxes	.35	@	.40

Bagging
(F. o. b. Boston)

Gunny No. 1—			
Foreign	—	@	1.80
Domestic	1.60	@	—
Manila Rope—			
Foreign	2.25	@	—
Domestic	2.50	@	—
Transmission Rope	1.75	@	—
Mixed Strings	.75	@	.85
Jute Rope	—	@	1.05
Jute Carpet Threads	.90	@	1.05
Bleachery Burlap	—	@	3.25
No. 1 Scrap Burlap	—	@	1.25
Scrap Sisal	1.35	@	1.40
Scrap Sisal for shredding	—	@	1.50
Wool Tares, heavy	1.30	@	—
New Burlap Cutting	1.75	@	2.00
Australian Pouches	2.50	@	—
Heavy Baling Bagging	1.75	@	2.00
Paper Mill Bagging	—	@	.85
Bagging No. 2	.50	@	—
No. 1 Burlap	—	@	3.50

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.06½	@	.07
New White No. 2	—	@	.06
Silesias No. 1	.06	@	.06¼
New Unbleached	—	@	.08
Fancy	.04	@	.04½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.06¼	@	.06¾
New Black, soft	.04	@	.04¼
Knaki Cuttings	.04	@	.04¼
O. D. Khaki	.04½	@	.05
Corduroy	.03	@	.03½
New Canvas	.08	@	.08½

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Twos and Blues	2.50	@	2.75
Thirds and Blues—			
Repacked	1.75	@	2.00
Miscellaneous	1.50	@	1.75
Black Stockings	3.25	@	3.50
Roofing Stock—			
No. 1	.75	@	.80
No. 2	.65	@	.70
No. 3	.50	@	.60
No. 4	—	@	.60

Foreign Rags
(F. o. b. Boston)

Dark Cottons	.80	@	.85
New No. 1 White Shirt Cuttings	7.25	@	7.50
Dutch Blues	—	@	1.80
New Checks & Blues	4.00	@	4.50
Old Fustians	1.65	@	1.75
Old Linsey Garments	.85	@	.95

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.09¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.09½	@	.10½
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
Book—			
No. 1 M. F. (carloads)	7.12½	@	7.60
No. 2 M. F. (carloads)	6.90	@	7.35
No. 3 M. F. (carloads)	6.65	@	7.15
No. 1 S. C. (carloads	7.60	@	8.10
No. 2 S. C. (carloads	7.35	@	7.85
No. 3 S. C. (carloads	7.12½	@	7.60
No. 4 S. C. (carloads	5.95	@	6.40
No. 1 Coated and Litho	13.25	@	—
No. 2 Coated and Litho	12.25	@	—
No. 3 Coated and Litho	10.00	@	11.50
Coated tinted	14.50	@	—
Wrapping—			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	5.00	@	—
No. 1 Manila	5.40	@	—
Fiber	5.40	@	—
Kraft, M. F.	5.90	@	—
Kraft No. 2	5.40	@	—
(Delivered Toronto)			
News, per ton—			
Rolls (contract)	61.50	@	62.00
Sheets	67.00	@	—

Pulp
(F. o. b. Mill)

Ground Wood	30.00	@	32.00
Sulphite easy bleaching	50.00	@	—
Sulphite, news grade	70.00	@	—
Sulphite, bleached	72.50	@	75.00
Sulphate	60.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.80	@	—
Soft White	2.60	@	—
White Blk. News	1.50	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.10	@	—
Light and Crumpled Book Stock	1.20	@	—
Ledgers and Writings	—	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	.80	@	—
Kraft	1.90	@	—
News and Scrap—			
Strictly Overissue	.70	@	—
Strictly Folded	.70	@	—
No. 1 Mixed Paper	.60	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.09½	@	.10
Fancy Shirt Cuttings	.06	@	.06½

Pumps in the Paper Trade

handling chemicals and acids must have an abundance of lubricant that resists the cutting action of the fluids with which it comes in contact.

These packings give long, satisfactory service as their lubricant is especially compounded to meet the exacting demands of each particular service.

It is the Length of Service that Determines the Real Value of a Packing.

Some packings have so little lasting qualities as to be very expensive, even in spite of their low first cost.

The real expense is in the frequent renewals where the cost of the labor is far more than the value of the packing.

Let us send you free working samples to prove what we claim. ***State size and service.***

GREENE, TWEED & CO.

Sole Manufacturers
109 Duane St., New York

PAPER TRADE JOURNAL

ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-NINTH YEAR

Published Every Thursday by the
LOCKWOOD TRADE JOURNAL CO., Inc.

GEO. S. MACDONALD, President; J. BANNINGA, Sec.-Treas.

Published at 34 No. Crystal St., East Stroudsburg, Pa.
Executive and Editorial Offices: 10 East 39th Street, New York
Chicago Office: **123 West Madison St.**

TABLE OF CONTENTS

Copyright, 1931, by the Lockwood Trade Journal Co., Inc.

Paper Chemistry Institute to Erect New Home 13
Pennsylvania Mills Have Better Demand 14
Paper Manufacturers Co. to Build 14
Paper Supplies for Post Office Dept. 15
Shipping Rates in Russian Pulpwood 15
Ontario Manufacturers Fairly Active 16
News Print Investigation Urged 16
Boston Market Fairly Active 17
R. H. Laftman Presented Gift 17
Quebec's Relations with News Print Industry. 18
Watervliet Installs Ross Drying System 18
Paper Demand Moderate in Chicago 20
Paper Cans Now Printed in 4 Colors 20
An Old Timer's Reminiscences 22
Green Core Tape Ordered Over Television 24
Visits Carter, Rice & Co. Branches 24
Obituary 26
To Take Over Warren Parchment Co. 26
New York Trade Jottings 28
Construction News 30
Indianapolis Demand Spotty 32
Logging Operations Concluded 32
Paper and Paper Stock Imports and Exports 34
Cost and Technical Association Meet 36
Editorial 38
Receivers for Minnesota & Ontario 39
Object to Invoice Charges on News Print 39

Technical Section

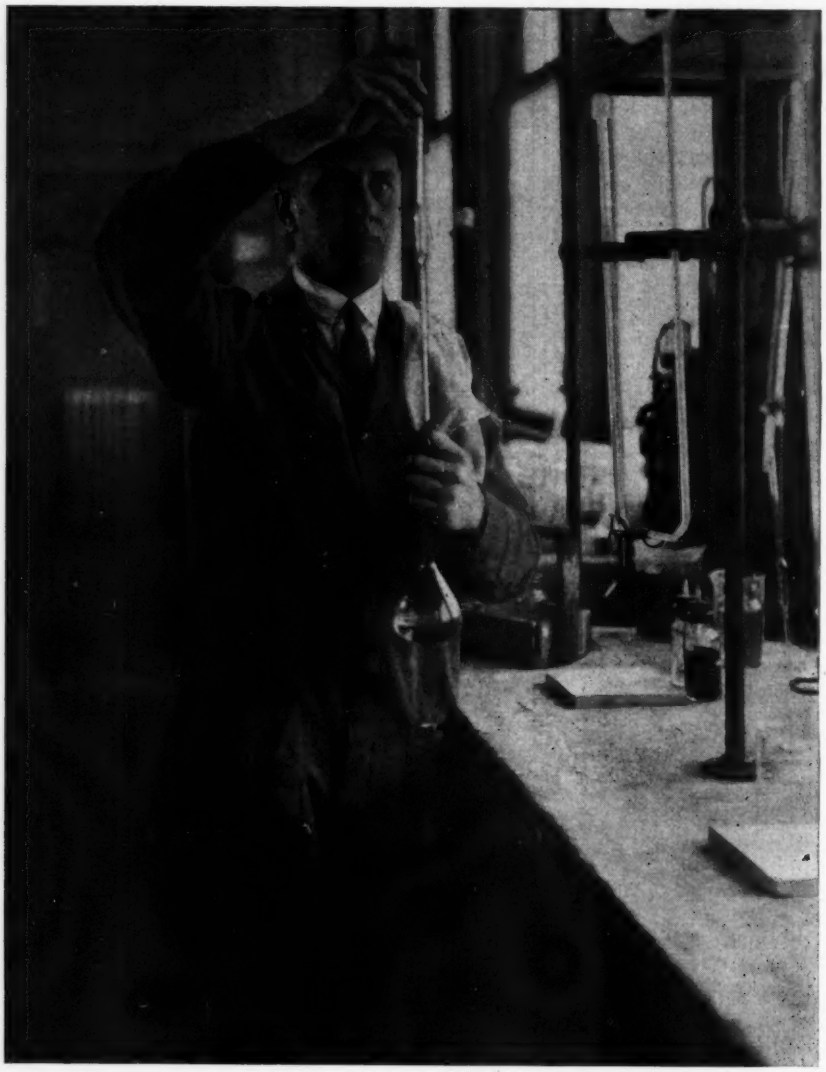
Determining Bleachability of Paper 41
U. S. Testing Co. Joins TAPPI 44
Importance of Patent Protection 44
TAPPI Notes 45
Current Paper Trade Literature 46
Technical Index to Vol. 91 55

Cost Section 61
Extends Position in Eastern Utilities 62
Imports of Paper and Paper Stock 64
New York Market Review 68
Miscellaneous Markets 70
Market Quotations 70

THE PAPER TRADE JOURNAL is indexed in Industrial Arts Index

Want and For Sale Advertisements, 75, 76, 77

E · B · G . . . A L L Y · O F · M A N Y



I · N · D · U · S · T · R · I · E · S

This is a section of the E B G "control laboratory" . . . part of the large plant at Niagara Falls.

Pioneers in the manufacture of Liquid Chlorine, EBG serves many and diversified industries with a product, a technical staff and service facilities as modern as tomorrow. But, also as pioneers, E B G maintains an ideal of business practice as old as the foundation of this institution.

Electro Bleaching Gas Co.

Pioneer Manufacturers of Liquid Chlorine

Plant: Niagara Falls, New York

Main Office: 9 E. 41st Street, New York, N. Y.

EBG

Liquid Chlorine